

SOFTWARE FROM BETASOFT

GAMES MASTER FOR THE SAM COUPE:

At last YOU can create stunning games and demos for the Coupe, with fast, smooth, animated sprites, complex sound effects, missiles, platforms, lifts, detailed backgrounds etc. No programming expertise required! Most of a game's design is specified by the menu-driven editor, which lets you edit graphics, animation, movement, sprite collision actions, sound effects, masking, control keys etc. A simple but very fast compiled language controls some features. A complex demo with animated bouncing sprites passing over and under each other, in front of a background, can be written with just a few commands to start the sprites off. (Once started, the sprites can act by themselves.) The editor produces stand-alone ROM-independent CODE programs that are free from any copyright restrictions - so you can sell your masterpiece! Impressive demonstration programs and an extensive sprite library are included to get you started. Backgrounds and sprites can also be grabbed from any Mode 4 screen and edited.

SIX SPRITE PLANES PLUS BACKGROUND
BIG SPRITES - UP TO A THIRD OF THE SCREEN AREA

TRUE COLLISION DETECTION ON SPRITE EDGE

SMOOTH, FAST PIXEL MOVEMENT OVER 100 ON-SCREEN SPRITES

POWERFUL EASY TO USE EDITOR COMPILED CONTROL LANGUAGE

COMPLEX MOVEMENT PATTERNS AND ANIMATION SEQUENCES

STEREO SPRITE-FOLLOWING SOUND EFFECTS

Written by Dr Andy Wright, author of the Sam ROM, MASTERDOS and MASTERBASIC, the program works with 256K or 512K RAM and ROM 2.0 and above. A comprehensive manual is included.

GAMES MASTER COSTS JUST £24.99 INCLUSIVE OF POSTAGE AND PACKING (ADD £1 IF OUTSIDE EUROPE). SPECIAL PRICE TO INDUG MEMBERS: £22.50 (QUOTE MEMBERSHIP NUMBER)

NEW !! Secrets of the SAM ROM revealed! The complete ROM 3 source listing on disk, extensively commented by the programmer, Andy Wright. Addresses and memory contents are included to make comparison with the actual ROM easy. The viewing program lets you move lightning-fast through the listing with various step sizes, perform searches, or list any part to a printer or (with MasterDOS) a disk file. A must for the serious SAM user! Just £9.95.

FILE MANAGER - The flexible file program. Files up to 780K. Requires MasterDOS and MasterBasic v1.7 or later (updates are free if you return your original disk. Enclose an SAE if you're not buying anything.) £12.99

MasterDOS - The DOS for the serious user. Faster, easier to use and more reliable than SAMDOS. Now available EXCLUSIVELY from BETASOFT. Offers RAMdisk and clock/calendar support, subdirectories, BACKUP, aerial and random access files, multi-sector READ and WRITE AT, and much more! £15.99.

MasterBASIC - The much-praised SAM Basic extension adds many new commands for graphics, sound, printing, data-handling, improving DOS, searching and editing programs, etc. £15.99.

STILL AVAILABLE: Beta DOS for the PLUS D. More files per disk, much faster, random-access files, file compression, BACKUP and many other features. Fully compatible with existing disks and files. Only £9.95.
BETA BASIC for the Spectrum (48K/128K+2) adds over 100 new commands and functions to Spectrum Basic. Versions available for Disciple+D, Discovery, or Tape/Microdrive. A classic for just £18.95!

Prices include P & P. Make cheques and postal orders payable to:
BETASOFT, 24 WYCHE AVENUE, KINGS HEATH, BIRMINGHAM, B14 6LQ

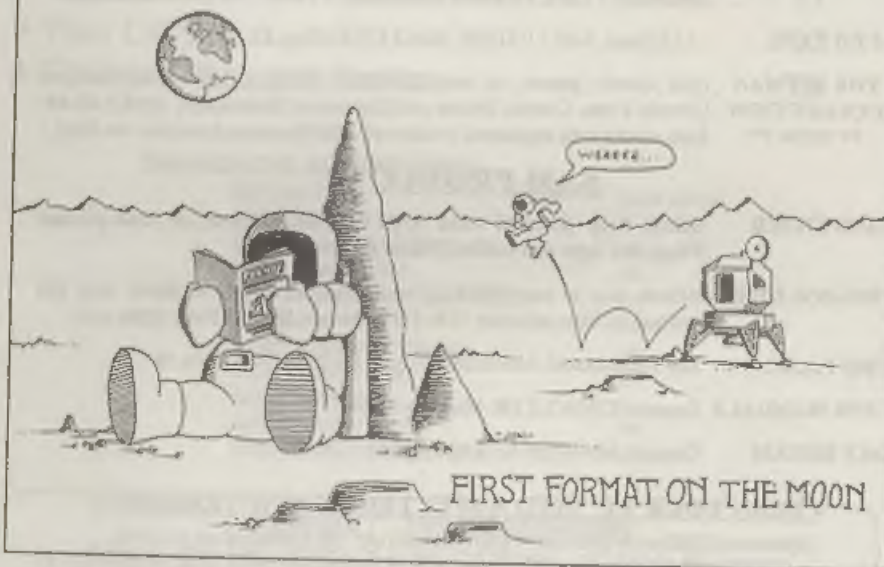
Vol.7 Nº11.

July 1994.

FORMAT

FOR SPECTRUM AND SAM USERS

GREAT MOMENTS FROM WORLD HISTORY, No 102 ...



FORMAT The Mag To Read
Wherever You Go

£1.50 (UK R.R.P.)

ISSN 0963-8598.

B.G.SERVICES

64, Roebuck Road, Chessington, Surrey, KT9 1JX. Tel: 081-397-0763.

SPECTRUM PRODUCT

- +2A MOD KIT** Converts a black +2A into a genuine +2 with standard expansion port. This allows the PLUS D to operate properly. Includes replacement ROM, FIXER and full fitting instructions + manual updates. **£15.50.**
- THE FIXIT** Converts the +3 and +2a expansion port so that some 48K add-ons will work. Single port version **£9.50**, double port version **£10.50.**
- VTX5000** **SPECIAL OFFER** - V23 direct connect modem with viewdata software in ROM. Version for 48K or gray +2 (+2A/+3 users need FIXIT) - **£10.**
- PD TAPE 01** Comms software for VTX5000, VTX711 and RS232s. **ONLY £1.50.**
- Dr. SCROLL** Scrolling software for VTX5000. **£4.00.**
- MEMBRANES** Spectrum 48K (rubber type) keyboard membranes. **£6.00.**
Spectrum+ / 128K keyboard membranes **£15.00.** ++ Now Available ++
- +3 PD TAPE** +3 Utilities. Side 1 +3DOS. Side 2 CP/M files. **£1.50.**
- THE RITMAN COLLECTION** Four classic games on one DISCIPLE/PLUS D disc. Bear Bover, Combat Zone, Cosmic Debris and Dimension Destructors. **ONLY £5.00**
**** NEW **** Also works with registered version of Z80 Spectrum Emulator on IBM.

SAM PRODUCTS

- SAMPLIFIER** Stereo Amp powered from SAM. Drives speakers or head-phones. Plugs into light-pen socket. **Phone for availability.**
- PRO-DOS LITE** Allows you to run CP/M 2.2 programs on SAM, supplied with full manual on disc and over 1Mb PD software. **Special Trial Offer £12**
- THE P.A.W.** The Professional Adventure Writing for PRO-DOS. **£16.50**
- CP/M MANUALS** Genuine CP/M 2.2 DR Manuals **£6.50**
- DAY DREAM** Graphic Adventure for SAM **£4.50**

□ TURN YOUR PC INTO A SPECTRUM - NEW VERSION □

Spectrum 128K with Interface 1 and Microdrives. All emulated on your PC. Unregistered copy **£2.50** Registered version **£15.** (Registration gives DISCIPLE/PLUS D disc reader and design for tape input interface). Ready-built tape interface **£11.50** incl p&p.

□ RIBBON RE-INKING SERVICE □

Star, Citizen and other standard fabric ribbons re-inked for **£1.50** each + return postage.

Please allow 28 days for delivery. All prices include UK postage and packing.
Overseas customers please add £2 on modems; PRO-DOS and +3 CP/M, add £1 on all other items.
Please make cheques/postal orders payable to B.G.Services.

BGS-1 10

CONTENTS

Vol.7 N^o11.

July 1994.

- ◆ News On 4 4
- ◆ The Editor Speaks 5
- ◆ Short Spot 7
- ◆ PD Zone 15
- ◆ The Skilled Secretary 17
- ◆ The Help Page 19
- ◆ Pagemaker Printing 23
- ◆ Small Ads 25
- ◆ BASICally Speaking - Part 8 27
- ◆ UNI-DOS Corner 31
- ◆ Your Letters 33
- ◆ FORMAT Readers Service 39

THIS MONTHS ADVERTISERS:-

BETASOFT	Back Cover
B.G.SERVICES	2
BLUE ALPHA ELECTRONICS	18
FRED PUBLISHING	12
HILTON COMPUTER SERVICES	8
PRISM PD	22
REVELATION SOFTWARE	16
RICHARDSON & CO	22
S.D.SOFTWARE	6
STEVE'S SOFTWARE	26
WEST COAST COMPUTERS	32

FORMAT ISSN 0963-8598

© Copyright 1994 FORMAT PUBLICATIONS. All Rights Reserved.

No part of this publication may be reproduced, in any form, without the written consent of the publisher. The purchaser of this magazine may copy program material published herein for his or her own personal use and provided that any such programs are erased if and when the purchaser disposes of this magazine in any way. While every effort is made to ensure accuracy in FORMAT the publisher will not be held liable for any errors or omissions.

FORMAT is published by **FORMAT PUBLICATIONS.**
34, Bourton Road, Gloucester, GL4 0LE, England.
Telephone 0452-412572. Fax 0452-380890.

Printed by D.S.Litho. Gloucester. Telephone 0452-523198.

NEWS ON 4

NO NEWS ON COMMODORE FUTURE

As the weeks tick by there is still no news of a buyer being found for the stricken Commodore International.

Although Commodore UK, and a few other sections of Commodore's world wide business empire, remain profitable there is some doubt that they would survive in their present form if the parent company was to be split up.

UK sales of the Amiga are at an all-time low but there is disagreement as to whether this is due to the plight of Commodore or just the usual low caused by summer. One thing that most are agreed on is that the longer Commodore's position remains uncertain the more chance that dealers will cut back on stocks and support.

Amstrad's interest seems to have waned, particularly as it has now spent large sums of money buying control of Viglan, one of the UK's leading office computer manufacturers. It now looks unlikely that Amstrad would have sufficient reserves to allow it to buy even part of the Commodore group.

ZEPPLIN TAKEOVER

Zepplin Software, the Co. Durham based company best known for its range of budget software, has been taken over by American company Merit Software. Zepplin, will cost Merit \$2.2 million and will be renamed Merit Studios (Europe).

25 year old Brian Jobing, who started working for Zepplin at the age of 16 and then later bought the company with his father for £15,000, will pocket most of the money. He will stay on as head of the European division.

DRIVER EXTRAS

Revelation Software have announced plans to launch a special disc of useful 'extras' for their DRIVER WIMP system. At the time of going to press it is not clear what will be on the disc although we are told it will include things like a card file application and several other useful programs.

JUPITER ONE

At the recent Gloucester show a new company called Jupiter Software aired its products for the first time. The company, based in Northants, launched a disc called JUPITER SHAREWARE DISC ONE. They also showed off some of their other work, some of which may be available by the time you read this.

For more details send an SAE to Jupiter Software, 2, Oswald Road, Rushden, Northants, NN10 0LE.

NEW DISC INTERFACE

We are pleased to announce the launch of a new disc interface for the Spectrum. Called the *FORMAT DX1* it is based on PLUS D technology but uses the highly acclaimed UNI-DOS as standard. The DX1 works with 1 or 2 drives and has the usual printer port built in. It also has the snapshot facilities of the PLUS D.

The new interface will sell for £59.95 but with a £10 discount to INDUG members. See the advert in this issue for more details.

Credits: Harry Connell

URGENT we need your news. Anything you think other people should know about. Each item printed earns the contributor 3 months extra subscription (please claim when next renewing).

The Editor Speaks

Issue eleven, another year almost gone, time does go so quickly when you are enjoying yourself.

Anyway, this month there is a review of the new version of Revelation's *The Secretary*. Judging by the feed back from users who obtained their upgrades early, the program is now even more user friendly. On the subject of upgrades, as you will all know we are doing the reduplication for Revelation, but several people obviously can't read and lots of discs have gone to Revelation in Exeter. Please make sure discs for upgrade are sent to us in Gloucester or there could be considerable delays.

Some time ago, in a reply in the letters page, I asked people for nominations for the Top Ten People In Home Computer History. Well, do you know how many lists I've received? ZERO!!!

But I'm not put off by your initial lack of interest - rather it makes me more determined. So here we go, list your Top Ten People and send it to us. We will allocate votes by giving 10 points for each first place, 9 for 2nd down to 1 for a 10th place listing. You can vote for anyone except me (I'm excluding myself for obvious reasons - I can't bear the thought of getting only a handful of sympathy votes). In addition I would like you to note on your entry why you are voting for the person you put at the top of your list.

Closing date for the voting is 30th September 1994 and the results will be announced in the October issue. Every entry must have a membership number on it and every member can vote only once. All entries will also be put into a prize draw (I'm asking Revelation, West

Coast, Fred and any others I can con, to donate a few prizes). Come on you lot, get voting.

Most Spectrum users will know the name Romantic Robot, they have been a key mover in Spectrum peripherals for so long it is hard to remember a time before their first Multiface. Well, as many of you will already know, they are pulling out of the 8bit market. But before they go they want to make *FORMAT* readers some special offers. Most of their lines are now in very limited stock so it will be a case of first come - first served, so don't come crying to me if you wait too long before sending off your orders.

They are knocking £5 of their Multiface+3 bringing the price down to £34.95, £5 off the Multiface 128 (now £24.95) and off the Multiprint (also now £24.95). In addition if you order one of the interfaces you can have a free copy of either Lifeguard (the infinite lives finder software) or Genie (the disassembler). You can buy the software separately, Lifeguard is £5 while Genie will cost you £7.95. By the way Genie is not compatible with Multiface+3. All items are fully guaranteed.

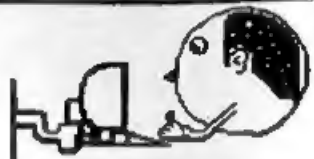
Romantic Robot will accept cheques, POs, Access, Visa or cash. Just add £2 p&p for hardware or £1 for software and send your orders, clearly mentioning *FORMAT*, to ROMANTIC ROBOT, 54, Deanscroft Avenue, London, NW9 6EN. Or you can phone them on 081-200-8870.

You never know, the response could be so good it makes them change their minds about deserting the Spectrum.

Until next month.

Bob Brenchley, Editor.

SD Software



Quality Serious Software For Spectrum & Sam Coupé

NEW - NEW THE FRACTAL COLLECTION NEW - NEW

A fast fractal generator for the ZX Spectrum. Now you can explore the fascinating world of fractals with this machine code program. Up to 200 shades on screen gives clear, crisp fractal pictures which can then be zoomed and expanded. Not just the Mandelbrot set but 18 different types can be made. Generates fractal music, you can hear the computer generate the fractal. Ready to use on disc for DISCiPLE/Plus D complete with ready-converted file for use with our SPECMAKER emulator on SAM.

SPECMAKER The simplest Spectrum emulator on the market for SAM. 1000s of 48K programs work without the need for any conversions. Most other programs need only minor changes. All the extra SAM keys work in Spectrum mode. Uses SAM's parallel printer port and up to 360K of SAM's memory as a RAMDISC. Plus D, DISCiPLE and Opus discs[®] can be loaded into SPECMAKER and saved to SAM disc. Can now convert files between Messenger and SPECMAKER format and so save on valuable disc space. Now comes with pre-converted Spectrum ROM image - no need to have a Spectrum available anymore. Supplied on 3 1/4" disc. *Requires MasterDos and MasterBasic to use Opus single density discs

PC-SUITE From the same author as SPECMAKER. Now you can transfer your IBM data files by reading and writing IBM discs (720K format) on your SAM Coupé. PC-SUITE will even let you format IBM discs on your SAM. Write and edit SAM Basic programs on your PC. Use PC-SUITE to copy SAM data files to PC so you can print them on that high quality laser printer at work... nb. This is not a PC emulator.

As used by Format Publications to transfer articles/programs for this mag.

SPECFILE+ Now a Spectrum data filing program that never gets out of date. Specfile+ holds a massive 28K of data and, by using compression makes it seem like much more. Free-format style means no complicated file design before you get started. Very fast CASE selective and complex searches. Designed to be extended - so it grows as you do. Works with PLUS D, DISCiPLE or under SpecMaker on SAM. This program is a must for anyone with data to store. *Special +3 version also available on 3" - add £2 to price shown below.*

UNIDOS version 2 of the incredible new DOS from Steve Warr for the PLUS D and DISCiPLE. Same DOS system file for BOTH interfaces. Random Access Files; Sub Directories; Hundreds of files on one disc; Hidden files; Protected files; Copy files of ANY length; incredibly versatile Screen Dump routines; Error Trapping and MANY more features. Compatible with all Spectrums (+2a/+3 in 48K mode). Over 20 programs now included on the disc.

Note: DISCiPLE or PLUS D not order.

PRICES:	Non Members	INDUG Members
The Fractal Collection	£5.95	£4.95
Specfile+	£12.95	£9.95
UNIDOS	£25.95	£19.95
Createfile Manual	£6.50	£5.50
SpecMaker	£12.95	£9.95
PC Suite	£25.95	£19.95
IBU* / SAM IBU	£4.90	£3.50
File Convertor*	£5.30	£4.00
Hacker's Workbench*	£9.90	£8.50

* GDOS programs still available

Please add £0.50 postage (£1.20 outside UK)

Spectrum Owners

Don't forget to say if ordering for PLUS D or DISCiPLE and state disc size - 3 1/2" or 5 1/4" (80 track only).

INDUG MEMBERS

Don't forget your membership number if claiming discount.

S.D. Software,
70, Rainhall Road,
Barnoldswick,
Lancashire,
England, BB8 6AB.

SHORT SPOT

YOUR HINTS, TIPS AND PROGRAMMING IDEAS

Edited By:- John Wase.

It's Short Spot time, and here's a cracker! A letter from our own Carol Brooksbank. Carol had a friend who wanted to copy some of her files into a database on a PC. 'Impossible,' you might say. But nothing's impossible to Carol. So she wrote this little program. It converts SAM's FileManager files into the ASCII delineated form which many other databases can read. For those not in the know, these are fields enclosed in inverted commas (") and separated by a comma; records ending with CHR\$ 13 + CHR\$ 10. "So what?" I hear you mutter. Well; it's easy; all you do is use SD Software's PC suite, and you can then read the files straight into a PC database. Not bad.

So, there's a little program, called *Ascidel* that does this. Here it is:-

```

10 FORMAT "d3",4,80
20 CLEAR 39999
30 LET x=40000
40 INPUT "FILE MANAGER filename
   to convert";file$
50 DEVICE d1
60 COPY file$ TO "d3:="
70 DEVICE d3
80 OPEN #5,file$ IN
90 FOR a=1 TO 2
100 INPUT #5,a$
110 LET b=256*CODE a$(1)+CODE
    a$(2),a$=CHR$ 34+STR$ b+CH
    R$ 34+","
120 POKE x,a$
130 LET x=x+LEN a$
140 NEXT a
150 LET a$=CHR$ 13+CHR$ 10: PO
    KE x,a$: LET x=x+LEN a$
160 DO
170 INPUT #5,a$
180 IF a$(LEN a$)=CHR$ 129 THE
    N EXIT DO
190 LET b=INSTR(a$,"."): IF b<

```

```

>0 THEN LET a$(b)=""
200 LET b=INSTR(a$,"-"): IF b<
>0 THEN LET a$(b)=""
210 LET b$="(spare)": IF INSTR
(a$,b$)<>0 THEN LET a$="x:
"
220 field
230 POKE x,a$
240 LET x=x+LEN a$
250 LOOP
260 rec
270 POKE x,a$
280 LET x=x+LEN a$
290 DO UNTIL EOF 5
300 INPUT #5,a$
310 IF a$(LEN a$)=CHR$ 129 THE
    N rec: ELSE field
320 POKE x, a$
330 LET x=x+LEN a$
340 LOOP
350 CLOSE #5
360 INPUT "filename",n$
370 DEVICE d1
380 SAVE n$ CODE 40000,x-39999
390 DEF PROC rec
400 LET a$=CHR$ 13+CHR$ 10
410 END PROC
420 DEF PROC field
430 LET a$=CHR$ 34+a$(3 TO )
440 IF a$(LEN a$)=CHR$ 129 THE
    N LET a$(LEN a$)=CHR$ 34,a
    $=a$+"," : ELSE LET a$=a$+C
    HR$ 34+","
450 END PROC

```

At the moment, it's one of those rare days in England when it's really really hot. I'm pounding this out in my hot kitchen; one of the few times of year when Rayburn cooking ranges are not advantageous, and I'm having difficulty. However, I guess that by the time this hits the streets, we'll have reverted to real weather again. In any case, it's a good 'un, so get typing.

Before we leave Carol, there are one or two notes. If you have no 1Mb expansion,

NEW RELEASE for the SAM Coupe ...

from the keyboard of Jack Gibbons (*author of the best Banking programs in the world!*)

**** personal filing system ****

The definitive database for the SAM Coupe

1000's of uses - can store anything - change it - sort - search extract - very easy to use - on screen help - scrolling summary displays with zoom, plus page up/page down, home/end, locate record - four print formats, summary, detail, label and mail merge uses all available memory/disk space - massive data storage, over 1 MEG* - design/re-design screens any time - inbuilt totalling - field validation - table lookup/validation - WYSIWYG screen and report design - add/change field structure any time - automatically restructures your data - uses index and random access files* password control - operates on any SAM Coupe, 1/2 drives, 256/512K, can use 1 MEG memory expansion* - RAM drives

50 page user manual - after sale support
auto-configures for 1/2 drives, 256/512K RAM, SAMDOS,
MasterDOS/MasterBASIC, 1 MEG - no need to edit program lines
*requires MasterDOS/MasterBASIC

Send £19.95 (inclusive of post/packing)
specifying SAMDOS(512K) or MasterDOS/MasterBASIC

to Hilton Computer Services Ltd
3 Suffolk Drive, Guildford, Surrey, GU4 7FD

or phone 0483 578983 and pay on receipt of order.

Buy with confidence - over 12 years in business:
other products available - send SAE for details.

omit lines 10, 60, 70. This will make the program operate on Drive 1. The only difference will be that it will take a bit longer to do the conversion.

The file produced will start with a two-field record, field 1 holding the number of records in the file, not including this record or the next one which holds the index to the field names. To omit this first record, delete lines 110-130 inclusive, and line 150.

Lines 160-250 convert the index record, removing punctuation marks which may cause problems in the new host program, and replacing the "(spare)" in the untitled spare fields by an empty field.

The rest of the program converts the main file, and then prompts for a filename for use in saving the converted file. Bless you, Carol; that's smashing!

I guess this is a procedural Short Spot, for here's a couple of items about SAM procedures. Firstly, Ton Voon of Shepherd's Bush, London, gives us a rather nice explanation of REF for use in procedures in SAM. Ton writes that normally, if you have a routine that starts:-

```
DEF PROC write x
and then call it with:-
```

```
write 15
```

then all the incidences of the variable x in the procedure will take on the value of 15. However, if the procedure is:-

```
DEF PROC reset REF x
LET x=0
END PROC
```

Then you can call it only with a variable as your parameter, e.g.

```
reset num
```

The end result will mean that num=0, because every instance of x in the procedure will be treated as if x were the variable num. This is quite useful in passing your parameter out of a procedure.

As an example, the following procedures reverse numbers or strings.

```
DEF PROC reverse a, REF c,b
DEFAULT b=0
IF a DIV 1=0 THEN LET c=b
EXIT PROC
reverse a DIV 10,c,b*10+a MOD
10
END PROC

DEF PROC reverstr a$, REF c$,b$
DEFAULT b$=""
IF a$="" THEN LET c$=b$
EXIT PROC
reverstr a$(2 TO),c$,a$(1)+b$
END PROC

DEF PROC reverstr2 a$, REF b$
LOCAL f
LET b$=""
FOR f=LEN a$ TO 1 STEP -1
LET b$=b$+a$(f)
NEXT f
END PROC
```

If you do not use MasterBasic, then replace EXIT PROC with a GOTO statement that jumps to the END PROC. Procedures reverse and reverstr are recursive procedures: reverstr2 is a normal FOR NEXT loop which is about three times faster than reverstr. You can call the procedures as follows:-

```
reverse 39485,number
reverstr "hello",back$
```

when the result should be number=58493 and back\$="olleh". However, if you call the procedures with:-

```
reverse 39485,a
```

then the procedure will not work as the variable b in the procedure will be replaced by a, and this is already used. One way round the problem would be to use an unusual variable name like zxqkwyt, but it would be difficult to type this every time!

Many thanks, Ton.

Now let's keep with SAM procedures, but go for something a bit different. Ettrick Thomson, again a regular contributor, has sent two letters; mercifully the second arrived when I'd not quite finished this month's column. Now, I guess we all suffer from printers. Well, almost. Sometimes this is through

word processors, when one often has only a little room to manoeuvre, but frequently one needs to output stuff direct. Ettrick to the rescue with a SAM procedure. No; it's not unique, but it's unusual, and therefore just the job for Short Spot. . .

So, you've a program that has to send various differing printer codes at various stages of your program. This is where the procedure 'printer' comes to the rescue. This is a procedure, in which DATA in the DEF PROC statement means that the number of parameters is not fixed, but is specified by a list of arbitrary length in a call of the procedure. This kind of procedure is mentioned in the Users' Guide, but only very briefly, so a practical example may be helpful. The Guide also defines the function ITEM, which has the value 1 if the next item in the list is a string, 2 if it is a number, and 0 if it "isn't there", ie the list has all been dealt with.

So, to recap, in the program definition of the procedure, the first line of the definition is:-

```
DEF PROC printer DATA
followed by the rest of the procedure. DATA shows that the number of parameters is variable.
```

And now, here is an example of a call from somewhere else in the program:-

```
printer 27,"x1",27,"k",0,27,"h",
1,27,"a1"
```

with 10 items in the parameter list, using the same syntax as items in a DATA statement. They represent four printer control codes as used in the STAR LC10II printer, and act as follows: select NLQ characters; select Courier font; select doubleheight, double-width characters; centre text. Obviously designed for the heading of a piece of text.

When the heading has been passed to the printer, then:-

```
printer 27,"h",0,27,"a0"
```

with two codes will make it revert to

normal-size characters and left justification.

In these two examples, strings have been used where possible, but numbers can be used exclusively (as is more common): for instance the code "x1" could be replaced by the corresponding decimal ASCII values 120,49; but this, of course, needs more key-presses.

Here is the program:-

```
100 DEF PROC printer DATA
110 LOCAL c,c$
120 OPEN #5,"b"
130 DO WHILE ITEM
140 IF ITEM=1 THEN READ c$: PR
INT #5;c$;: ELSE READ c: P
RINT #5;CHR$(c)
150 LOOP
160 CLOSE #5
170 END PROC
```

Now type it in and see how it runs. Never seen a procedure like this before? Neither had I, but it works! Come on, you ingenious readers, lets have some more uses for procedures which specify DATA as the parameter list. Many thanks Ettrick.

Next we have a SAM comment from D.F.Pillmore of Long Eaton, Nottingham, who amazed me by having his letter delivered by hand (and as some of you know, I live in the middle of no-where). C'mon, Mr Pillmore, how did you do it? Anyway, Mr Pillmore typed in 'Frames' from Peter Alleston, only to find 'Integer out of range'. The problem seems to be in the code for HT in Line 40: here is the modified line.

```
40 LET FX=128, FY=40, WD=80,
HT=20, Q=0.15, F=1, ST=PI/
2/FRAMES
```

Mr Pillmore also found that a change of PEN made the wireframe more visible, and that in Line 90, where he has PEN 0, again a number there made the opposite run of frames much more easily seen.

Many thanks, Mr Pillmore.

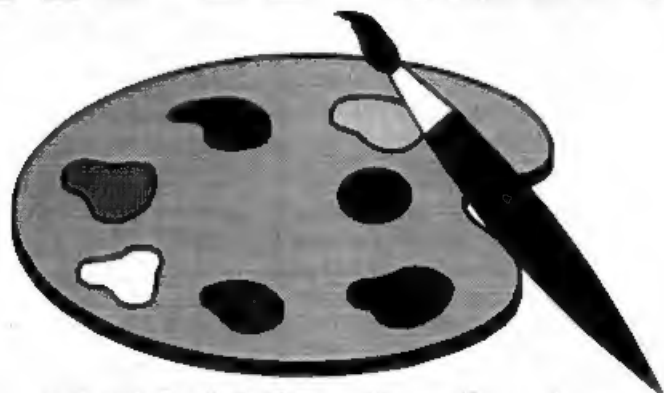
And while we're on the subject of plotting and drawing pictures, I have an

interesting letter from Ern Warwick of Stoke, Plymouth, and a rather sad follow-up. Ern sent me a disc last March, together with a book on 'Fun Mathematics for your Microcomputer' by Czes Kosniowski. Part of this deals with the use of polar graphics and will produce all sorts of wonderful pictures. The follow up from this is that I had a terse letter from Ern, assuming that I had no interest in his material and demanding its return. In point of fact, this is not so: there is often quite a long lag in getting material into the column: some times I have too much, some months too little, and Bob always cuts and trims to size afterwards, and I have to rescue the trimmings and put them into another issue. So please don't assume that because you haven't seen your masterpiece immediately, it won't be used. In point of fact, Ern has lifted 'polar' from 'Fun Mathematics' and modified it so that it will run on SAM. It will produce all sorts of fascinating mathematical curves according to the equation that you supply: just try it.

```
10 MODE 1: LOAD "specyfont"C
ODE
11 LET sx = 225
12 LET sy = 173
13 LET ratio = 0.8
14 LET hy = sy/2
15 LET hx=sx/2
16 CLS
17 PRINT " Polar Plotting"
18 PRINT
19 PRINT "1. R=1*cos(a*s),l*s
in(b*x)"
20 PRINT
21 PRINT "2. R=sin(2*x)"
22 PRINT
23 PRINT "3. R=Sin (7*x)"
24 PRINT
25 PRINT "4. R= 1+2*Cos(z)"
26 PRINT
27 PRINT "5. R= 1+cos(z)"
28 PRINT
29 PRINT "6. R= 1+sin(2*x)"
30 PRINT
31 PRINT "7. R= 1+2*cos(2*s)"
32 PRINT #0; AT 0,0; "Which E
quation? ": PAUSE : LET r$
```

```
= INKEY$: LET n=VAL r$
33 IF n= 1 THEN LET a$= "1*co
s(a*x)-1*sin(b*x)"
34 IF n= 2 THEN LET a$="sin(2
*x)"
35 IF n= 3 THEN LET a$="sin(7
*x)"
36 IF n= 4 THEN LET a$="1+2*c
os(z)"
37 IF n= 5 THEN LET a$="1+cos
(z)"
38 IF n= 6 THEN LET a$="1+sin
(2*x)"
39 IF n=7 THEN LET a$="1+2*co
s(2*x)"
40 PRINT
41 PRINT "For standard plot u
se A=1, B=1"
42 PRINT
43 PRINT #0; AT 0,0; PAPER 2;
"Value of A ": PAUSE
: LET r$= INKEY$: LET a=VA
L r$
44 PRINT #0; AT 0,0; PAPER 1;
"Value of B ": PAUSE
: LET r$= INKEY$: LET b=VA
L r$
45 CLS
46 PRINT AT 9,7; PAPER 6; PEN
1; "Calculating range"
47 LET m=1.0e-30
48 FOR x= 0 TO 2*PI STEP .1
49 LET r= ABS (VAL (a$))
50 IF m<r THEN LET m=r+.1
51 NEXT x
52 REM PLOTTING
53 FOR i = 1 TO 100
54 NEXT i
55 CLS
56 REM Plotting
57 FOR x=0 TO 2*PI STEP .01
58 LET r = VAL (a$)
59 LET u = hx+hy*ratio*cos (a
*x)*r/m
60 IF u<0 OR u>sx THEN GOTO 6
1
61 LET v=hy + hy*SIN (b*x)*r/
m
62 IF v<0 OR v>sy THEN GOTO 6
4
63 PLOT u,v
64 NEXT x
65 PRINT AT 0,0;"Equation No:
= ";n;";a$
66 PRINT AT 21,0;"Value A=";a
; TAB 22;"Value B=";b
67 PRINT #0; AT 0,0;"Copy? ":
PAUSE : IF INKEY$="Y" OR
INKEY$="y" THEN GOTO 69
```

SAMPaint



The ADVANCED Art Package For The SAM Coupé

"excellent... very impressive... brilliant... the best... superb... astonished... quality... real professionalism..." Carol Brooksbank, *FORMAT* February 1994.

We could spend page upon page quoting from Carol's review or listing the features of SAMPaint.

But the fact is, SAMPaint sells itself. It has every SAM owner talking about it, it even has a lot of 16-bit owners jealous! And who can blame them when we've implemented almost all the features from their art packages and more...! If you still need convincing, get in touch and we'll send you a list of the main features.

"No other art package can be taken seriously after SAMPaint - an artist isn't an artist without it."

R.R.P. £24.99 - INDUG Members Price £22.50



Send payment with order to:-

FRED PUBLISHING 40, Roundyhill, Monifieth, Dundee, DD5 4RZ. Tel 0382 535963

For SAM Coupé
With 512K Memory

```
68 IF INKEY$="N" OR INKEY$="n
  THEN GOTO 70
69 DUMP 4
70 PRINT #0; AT 0,0;"Another
  ?": PAUSE 0; IF INKEY$="Y"
  OR INKEY$="y" THEN GOTO 1
  1
71 STOP
72 SAVE "polar" LINE 10
```

Thanks, Ern, and I'll be in touch.

I've got a little disc from Stuart Hughes of Holywell here, in my bag of goodies. This little Spectrum utility converts a code file above RAMTOP into a series of DATA statements in the Basic area of memory. Stuart suggests that these can then be printed out or saved on a PLUS D disc and entered directly into SAM with the Spectrum emulator. Once the data is in the SAM, it's relatively easy to read each byte back into a code file at the appropriate address. Though why on earth you can't read the code straight into SAM, I'm not sure. Anyway, back to the Spectrum. Unfortunately, it's a fact of life that each byte held in a DATA statement can take as much as ten times the amount of memory it would occupy in a code file, and for this reason, it is possible to convert only a maximum of about 3,500 bytes.

So, type in the program, then SAVE it. To use it, do a CLEAR 59999, LOAD it and then LOAD in the code starting from address 60000. In order to avoid problems with many of the important system variables that control and monitor the Basic area of memory, some 280 REM statements, each containing four lines of zeros are loaded in before the conversion process begins. These occupy about 36 kbytes of memory and they are overwritten by the utility as it forms and pokes the DATA statements into the Basic area starting at address 23755. After the conversion with all the DATA statements in place, the program constructs another dummy REM line in order to join up with the remaining REM lines that have not been overwritten.

These remaining and now unwanted lines can be removed with a block-delete utility such as the one that appeared in *FORMAT* (Help Page, July 1993).

Here's 'datapoke':-

```
180 REM ..Misoft compiler..
185 REM ..source program..
190 REM .....datapoke.....
195 REM ... (c) ASH 1993 ...
200 REM :INT + a,b,c,p,n,addr,
  codlen,count,byte,length,m
  emlen,line,psize,laddr
210 REM : GOTO 366,368,370
290 REM : OPEN #
300 INPUT "Enter code file len
  gth ";codlen
302 LET addr=23755; LET line=1
  0
305 LET count=0; LET memlen=1
308 CLS
310 FOR n=60000 TO (59999+codl
  en)
313 LET count=count+1
315 LET p=PEEK n
320 LET psize=1+(p>9)+(p>99)
325 LET a=p*(p<10)+INT (p/10)*
  (p<100)+INT (p/100)
330 IF psize=2 THEN LET b=p-a*
  10
335 IF psize=3 THEN LET b=INT
  ((p-a*100)/10); LET c=p-a*
  100-b*10
337 LET length=psize+7
345 IF count<>1 THEN GOTO 360
350 LET byte=0; GOSUB 500
352 LET byte=line; GOSUB 500
353 LET byte=length+1; GOSUB 5
  00
354 LET byte=0; GOSUB 500
355 LET byte=228; GOSUB 500
360 LET byte=a+48; GOSUB 500
362 GOTO 372-(psize*2)
366 LET byte=b+48; GOSUB 500
367 LET byte=c+48; GOSUB 500;
  GOTO 370
368 LET byte=b+48; GOSUB 500
370 LET byte=14; GOSUB 500
371 LET byte=0; GOSUB 500; GOS
  UB 500
372 LET byte=p; GOSUB 500
373 LET byte=0; GOSUB 500; GOS
  UB 500
374 LET memlen=memlen+length
375 IF n=(59999+codlen) OR cou
  nt=20 THEN GOTO 390
380 LET byte=44; GOSUB 500; GO
  TO 418
```

```

390 LET count=0
395 LET line=line+1
400 LET byte=13: GOSUB 500
405 POKE (addr+memlen-2),memle
n
417 LET memlen=1
418 PRINT AT 0,0;"byte ";n-599
99
420 NEXT n
425 LET byte=0: GOSUB 500
427 LET byte=line: GOSUB 500
430 LET laddr=addr
431 LET addr=addr+1
432 LET byte=0: GOSUB 500
434 LET byte=234: GOSUB 500
436 LET length=2
438 FOR n=0 TO 130
440 IF PEEK (addr+n)=13 THEN L
ET n=130: GOTO 450
445 LET length=length+1
450 NEXT n
455 POKE laddr,length
458 STOP
500 POKE addr,byte
510 LET addr=addr+1
520 RETURN

```

Incidentally, I seem to recognise some of this, and astute readers will be aware that the topic has been discussed before. However, a quick flick through *FORMAT* doesn't show it up. And it probably hasn't been in before, for the first line of Stuart's letter reads "I have just completed a utility program that you might find useful, although it could be a little too big for the Short Spot." The trouble is, of course, that material comes in irregularly; more in winter than summer, and just around exam time there's a dearth of stuff from our youthful readers. So some of it (like this) sits around a while. But most of it eventually goes in. And well worth waiting for. Many thanks, Stuart.

Another 'hangover' is a further little note, again from Ton Voon, who writes about *The Secretary* (almost all SAM stuff this month isn't it). With this word processor, some letters occasionally disappear if you're a fast typist, or you reach the end of the line (he is working with the old version it seems). This is because the keyreading routine is right,

but in the wrong order. To change it, use the 'hidden key' action of holding down ESCape and then pressing RETURN. This will take you back to Basic. And Ton gives a little warning here not to use RUN when you've finished the mods, and want to get back into *The Secretary*, 'cos this will reset all the variables. Instead, use the procedure RESUME.

When in Basic, alter line 110 to:-

```

110 DO LET a=PEEK 23560 LOOP U
NTIL a: POKE 23560,0: POKE
23611,332 BAND PEEK 23611
: IF a>32 THEN GOTO 200

```

Then SAVE "Secretary" LINE 10. This should give you a better typing response, though the program has to catch up sometimes.

Again, many thanks, Ton.

And that's all for this month. The more astute will notice that there's very little about the Spectrum: well, there's very little come in about the Spectrum. Come on, now; surely ALL the corners of Sir Clive's rubber-keyed beer mat have not yet been exhaustively investigated? Let's have some more nice short spots (short being the operative word). Send them to:-

John Wass,
Green Lays Cottage,
Bishampton,
Pershore,
Worce,
WR10 2LX.

See you next month.

**GENUINE
REDUCTIONS
LAST WEEK**

"Yes! Everything
was reduced,
Last Week..."



PD ZONE

Part 2.

By:- Bob Brenchley.

Last month I laid the ground rules for Public Domain software, PD as we all call it. This month I want to continue explaining about some types of program that are not true PD but are often available from PD libraries/distributors.

I've already explained shareware, they are FULL working versions of programs. Normally distributors are keen to make sure they have the very latest version on their books. Programs that are sold in cut down versions are not true shareware, they are more correctly termed 'demo-ware'. In this case, when you register, you get the full version of the program and documentation. Demo-ware does allow you to sample a program but often you can't use key facilities (like loading and saving for instance) so you only get a limited feel for the software. On the other hand there is then more incentive to 'go legal' and register the program so you can have a full version.

Some software requires you to make a payment to the author but not in the form of money. Book-ware programs require you to send a book (on the author's chosen subject, to him with your registration form. Post-card-ware gets the author a big collection of picture postcards from around the world. You think of it, and some programmer has asked for it instead of payment in the past (and some things have been quite disgusting but I won't go into that here).

Free-ware is a funny one. It is almost

PD, but the author retains that little bit of control. He allows anyone to GIVE a copy to someone but will often only licence a select few PD companies to distribute his work - a true PD program has no such restrictions.

Another funny is Message-ware. People can only distribute the software if they clearly display a particular message in all adverts and other paperwork that goes with the program. In recent years this has become wide-spread in the USA where it is used to plug political or religious views - in fact it is often called Bible-ware for this reason.

Now back to distributors, or PD libraries as they are more often known. A good one will have a range of software, neatly catalogued by subject and/or author and will level his charges so that he can cover duplication, postage, advertising and a few other running expenses (like going to shows for instance). He will not have masses of discs listed, all containing other peoples collections of PD, so that you end up buying a disc full of software you already have just to get one title by your favourite writer. And while there will be some demos, he will be very selective in what he accepts - because he will know that once you've seen one scrolly demo you've seen enough.

PD is finding its place in the Spectrum/SAM world but it has a long way to go. Sometime, I'll be back with more...

Continued when we have room.

SAM GAMES AVAILABLE FROM REVELATION

LEGEND OF ESHAN

A game like none seen before on SAM.

This graphic game of strategy and adventure takes you into a vast world of demons and war-lords. As Eshan you must raise an army to save the beautiful land of Avinell from the terror of Barquin the Witchking and his hordes. With your friends and followers you must rescue Avorell the Noble and restore him to his palace. This is *not* an arcade game, this is *not* an adventure, this is something *very special*.

Legend Of Eshan works with keyboard or joy-stick and is also fully Mouse-compatible. Comes complete with comprehensive instructions and a map of the lands of Avinell.

£14.95 (£12.95 to INDUG members)

WOP GAMMA

⊕ A Super-Fast 'Boulder Dash' game with FAST Full Screen Scrolling - 99 Levels all with super graphics and mega music.

£9-95 (£8-95 to INDUG members)

PRINCE OF PERSIA

The classic game of sword-fighting and adventure that has you racing to save the beautiful princess from her fate at the hands of the evil Vizier. Superb animation, hundreds of rooms to explore, a real challenge for any games player. Original priced at £14.95 now re-released by popular demand and at a price that no-one can miss.

£9-95 (£8-95 to INDUG members)

REVELATION FOR THE VERY BEST IN SERIOUS SOFTWARE

> **THE SECRETARY** - The most advanced word-processor for SAM, powerful, versatile and easy to use. **NEW Version 1.5 Available Now** - The BEST just got better £14.95 (£12.95)

* Existing registered users can upgrade by sending their original disc, together with an SAE for its return, to: Secretary Updates, C/o Format Publications, 34 Bourton Road, Gloucester, GL4 0LE. Please pack well, we cannot be responsible for damaged discs.

> **COMET Z80 ASSEMBLER** - The professional SAM assembler - a must for anyone starting with machine code - **SPECIAL OFFER PRICE** until 31/8/84 £19.95 (normal price £29.95)

> **CAMPION - THE SPREADSHEET**, versions for both SAM and Spectrum (DISCIPLE or PLUS D). Featuring over 70 built-in functions and ready made formula, this program is easy to use and yet powerful enough to rival many expensive PC programs. A very comprehensive manual (over 80 pages, with lots of examples) Available now at £29.95 (£24.95) - Works best with MasterDOS.

* State which computer version (SAM or Spec) and disc size required (3½" or 5¼").

Prices in brackets() are for INDUG members.

DRIVER

The Graphical User Interface for SAM

Comes complete with many built-in utilities and ready to run applications. Also has a full disc-based tutorial to get you started very quickly. DRIVER gives you the ease of use that you only found on big office computers before. So easy to use yet so powerful. DRIVER comes with a large manual full of sample screens. **Fantastic Value** £29.95 (INDUG members £24.95)

Special Offer - Buy DRIVER together with Official West Coast Computer SAM Mouse and SAVE £5. Our price ONLY £69.95 incl UK p&p. (INDUG members £64.95)

COMING NEXT MONTH - DRIVER's EXTRAS

A set of extra utilities and applications to add even more features to DRIVER

* All prices include UK postage and packing (Europe please add £1, other overseas please add £2).
* Payment by UK cheque (made payable to Revelation Software), PO or cash. Sorry but we can't accept orders by Euro-cheque or Giro.
* Please Quote INDUG membership number clearly on order if claiming discount.

Revelation
Software

* Send orders to:

Revelation Software, P.O.Box 114, Exeter, Devon, EX4 1YY.

The Skilled SECRETARY

A Review By:- Carol Brookbank.

Revelation's *The Secretary* has been improved, and they are offering a free upgrade to registered users who send their original disc and an s.a.e. to Format Publications (who do Revelations duplication).

Back in January 1983 (Vol.6 N°5) I reviewed the original release and gave my seal of approval. Now version 1.5 is out I thought you would appreciate a second look at what must be SAM's best selling word-processor.

Overall, the program has been speeded up in many areas - especially in keyboard reading so that it no longer loses letters at the start of a line - and all known bugs have been eliminated. The cursor will now move from the start of a line to the end of the previous one and vice-versa. Page numbering can start at any number.

DELETE and INSERT now have a global/local switch. A global insert will move the whole document down properly when you insert, and blank lines in later pages are no longer closed up. Local insert will not affect later pages so long as there are blank lines at the bottom of the current page into which the text can be pushed. The corresponding DELETE modes will pull up the whole document or just the current page. The AUTO-INSERT mode now works at an acceptable speed, and inserts a new line whenever needed. Text typed in INSERT mode is not justified, and there is still a tendency for letters to be lost at the start

of the line in this mode, so it should be kept for when you really do need to insert. Use OVERWRITE mode when you are adding text at the end of the document. Paragraph re-forming now works properly across page boundaries.

There are now three printer code replacement modes. INV/J distributes spaces along the line to replace the codes, leaving justified text. INV/T places a space where the code appeared, so columns in tabulated work are not disturbed. INV/U is unchanged. Three extra INV codes have been introduced, allowing you to change to Elite or Pica type anywhere in the document, or to insert a Form Feed wherever you want one.

All printer codes can now be redefined, and can be up to 32 bytes long. There is also provision for codes to be sent at the start or end of document, page or line, as well as the embedded controls.

Search/replace has also been improved and is now faster. Three switches have been introduced to help you get what you want. The first allows you to: Overwrite word/Delete and replace word and reform para. The next allows for: Case to mimic case being replaced; Case to be as given in word replacing. The third gives you the option to Prompt before replacing or Auto-replace every occurrence.

File sub-directories can now be handled, and ERASE and RENAME work on files in the currently displayed

directory. You can change the paper/pen/window/border colours to suit yourself, and printer codes can be loaded from disc without needing to exit the program. When you are working in one of the menu modes, pressing EDIT will allow you to call back the menu, while ESC takes you back to the text. It is quite a time-saver, when you are setting up headers, footers, page numbers etc., to be able to switch to another mode without having to return to text mode every time before you can call up the menu again.

Finally, a printer buffer has now been introduced if you are using *The Secretary* with MasterBasic. Provided you do not exit *The Secretary* while printing is going on, you can delete the document, save, load, type in another document and so on, without disturbing the printing - a very nice feature.

This is now a very good and fast operating word-processor. All the irritating little quirks in the early version have been dealt with, and quite a lot of the operation has been switched to machine code which has made things much quicker and more efficient.

If you want a SAM word-processor, try this one - you will like it. If you already have a legal copy of *The Secretary*, grab Revelation's offer of a free upgrade. If you are using a pirate (a polite word for stolen) copy supplied by a friend, there is no free upgrade for you - you didn't pay for it in the first place. But now is the time to go straight.

The improvements alone are worth what Revelation charge for the program, and a similar program for an IBM PC would cost you three figures.

See Revelation's advert in this issue for details on ordering or upgrading.

Blue Alpha Electronics

EXPERT REPAIRS FOR SPECTRUM & SAM

SAM (excluding drives)	£35
SAM Power Supply	£20
Most SAM Interfaces	£20
Spectrums (excluding tape deck or +3 disc drive)	£30
PLUS D	£20

Other items not listed - please phone with details of fault and in many cases we can give an instant quote. All our repairs carry a **Full 3 Months Guarantee** against the same fault recurring.

All prices include UK return postage by **Insured Courier** - overseas customers please write for details on cost of postage and insurance.

Please note: We will quote for the repair of disc drives only after a **FREE** inspection - ring us for details.

NEW BLUE ALPHA *NEW* 3 1/2" DISC DRIVES

Top quality, metal cased 3 1/2" 80 track DS/DD drives with built-in power supply and all necessary leads for connecting to DISCIPLE, PLUS D, DX1, SAM (via External Drive Interface) or BBC "B"

ONLY £59.95 + £3.50 p&p

ALSO AVAILABLE

We can make and supply all types of cables - custom made to your specification. Just send us a Stamped Addressed Envelope with details of cable required (pin-outs, length, etc) and we will send you a quotation.

Send cheque/postal order (Pounds Sterling Only) payable to:- Blue Alpha Electronics.

REMEMBER to pack things well, we will use your packing for return.

**Blue Alpha Electronics,
18, Maesybont, Glannan,
Ammanford, Dyfed,
SA18 2AY.
Tel: 0860 157618.**

The HELP PAGE

Edited By:- Ray Bray.

Having just moved house (please note new address at the end), and returned from two weeks in Germany, I now have time to sit down and compile another Help Page surrounded by debris from the various building operations that are still active.

The first letter this month comes from Lee Sutton of Bradford who has recently fitted a 256K memory upgrade to his SAM and whenever he tries to load a disc he gets the "No DOS 0.1" message. He also states that this used to happen before but by making a CALL 229385 the discs would load.

You don't say when you purchased your SAM but I suspect that it is fitted with a version 1 ROM; you can check this by entering PRINT PEEK 15. This gives the version number of the ROM multiplied by 10, and if the result is less than 20 then this is your problem. You can obtain the latest version ROM from West Coast for £12.95 plus £1 postage and packing. You will also receive the latest version of SAMDOS.

Our next query is rather intriguing and concerns the way that the INPUT command operates. Dr. T. Wilson of Falkirk has written a Metric/Imperial measures conversion routine in which he has used UDG 144 as a superscript cubed (³) symbol. He uses a neat logic statement to combine this with the required unit of measurement to make up a string (m\$) to produce the input statement:- INPUT (m\$);p\$.

Unfortunately instead of displaying say "Enter price per ft.³", it produces

instead; "Enter price per ft. DIR". However, if PRINT m\$ is entered the string is printed correctly. Now 144 is the token code for DIR so the syntax routine for the INPUT command is obviously ignoring the UDG assigned to 144, which would be logical if that was the end of it, but the plot thickens. If a PRINT statement is made at any point before this INPUT statement is activated and, PROVIDED THAT NO OTHER INPUT STATEMENT IS ACTIVATED IN BETWEEN, then m\$ is displayed correctly! The way round this problem is write the INPUT statement as:-

```
PRINT " "; INPUT (m$);p$
```

but it would be interesting to know why this is so. Can anyone explain this?

Now for a question on printers. David Spark of Harrogate is thinking of buying a Cannon BJ-10SX bubble-jet printer and wishes to know if it will operate with *The Secretary* and *SAMPaint*. The BJ-10SX will work with *The Secretary* but you will have to alter some of the standard printer control codes. The BJ-10 also supports bit image graphics giving normal, double and quadruple densities and will work with *SAMPaint*, however I am not certain whether it will work with *SAMPaint*. If any of our readers have had any experience of using this printer with *SAMPaint* (or with *FLASH!* which I know has given some problems), please write and let us know.

David also has a question on Spectrum and PLUS D. He would like to have a routine to record a PLUS D CAT to an

array or a string. He said he remembers such a routine in *FORMAT* some time ago but it needed the disc to be write enabled, which is not practical in his case. Well, I have not been able to trace the routine you mention but here is a simple Basic routine which will record the name and type of file only, to an array. Being in Basic it is a bit slow but it might do the job you want it for.

```

10 CLEAR 49999: DIM D$(80,20)
20 LET T=0: LET N=1
30 FOR S=1 TO 10: LOAD @1,T,S,
50000
40 GOSUB 100
50 NEXT S
60 IF T<3 THEN LET T=T+1: GOTO
30
70 STOP
80 :
100 LET AD=50000
110 LET T$="": LET N$=""
120 LET Q=PEEK AD: IF Q=0 THEN
GOTO 180
130 RESTORE (200+Q*10): READ T$
140 FOR J=(AD+1) TO (AD+10)
150 LET N$=N$+CHR$(PEEK J)
160 NEXT J
170 LET D$(N)=N$+T$
180 LET N=N+1: IF AD=50000 THEN
LET AD=50256: GOTO 110
190 RETURN
200 :
210 DATA "BASIC "
220 DATA "NUM.ARRAY "
230 DATA "STR.ARRAY "
240 DATA "CODE "
250 DATA "SNAP.40K "
260 DATA "MD.FILE "
270 DATA "SCREENS "
280 DATA "SPECIAL "
290 DATA "SNAP.128K "
300 DATA "OPENTYPE "
310 DATA "EXECUTE "

```

J.H.Ree of Reading also has a question on PLUS D discs. He wishes to know if SAM is capable of reading a PLUS D disc. The answer to this is yes, the SAM DOS is compatible with the PLUS D disc format (with the exception of BASIC files and 128K Snapshot files). However, unless one of the Spectrum emulators is

employed, the practical use of this is limited to running simple machine code routines and transferring the type of files used by word processors.

J.H.R. has a second question which concerns the Spectrum +3. He requires advice on what software or hardware is available for transferring programs (especially protected games) from tape to +3 disc. The utility 'SP7 TAPE TO +3 DISC' is still available at £14.95 from Kobrahsoft who often advertise in *FORMAT*. Another utility, 'TRANSPACK' can be obtained from LERM, 11 Beaconsfield Close, Whitley Bay, Tyne & Wear, NR25 9UW. It used to cost £11.99 but phone them on 091 2533615 for the current price. Mike says both of these are relatively easy to use and are quite successful for most conversions. On the hardware side there is Multiface3 which was successful with the conversions which could not be achieved using the software. It's only drawback is that it has to be active when loading the programs which it has saved. This may be overcome by using another piece of software known as 'M3 Unlock', however, Mike has not been able to contact the person who used to market it so you will have to scan the small-ads if you wish to find a copy.

David Williams of Cardiff has provided us with the second query on the +3 (just when I was thinking that +3 operators were all experts or had sold their machines!). David has been using his +3 for a number of years and has accumulated numerous text files which he would eventually like to transfer to a PC. He knows that they can be transferred via a PLUS D and a Spectrum emulator but wondered if it could be done without a PLUS D. He got in touch with Brian Gaff who offered the following advice which he (David), thought other +3 owners might find

interesting Brian Gaff suggested two options -

1. Add a 3.5" drive as drive B and use BFORMAT to format the discs, which gives the correct format which a PC can read onto the hard disc. The only problem with this is that Tasword+3 files will have their headers removed.

2. The second option is to use a null modem across the two RS232 ports and as the files are ASCII, any comms program on the PC should be able to cope using either -

a) FORMAT LPRINT "r";"u": FORMAT LINE 9600. COPY "file" TO LPRINT

b) Configure TASWORD+3 to print via the serial port and PRINT the files to the PC.

Brian says the second option is by far the best way as the carriage returns and line feeds will be in the right places and there will be no header to remove as in (1). A Spectrum RS232 cable and a null modem adaptor will be required as well as the PC comms software. Brian says he can provide the cable and the software but not the adaptor. If any one knows where the adaptor can be purchased please let us know, similarly if anyone has succeeded in transferring +3 files to a PC please send us the details.

Two readers have asked where can CP/M PD software be obtained. The only contact we have is the CP/M PD LIBRARY, Winscombe House, Beacon Road, Crowborough, East Sussex, TN6 1UC. No doubt there are other suppliers who advertise in various computer publications.

Finally we have a question about sound on SAM from Les Quinn of Banff, Scotland, who wishes to know which port addresses control the sound chip. Going back to fundamentals, the SAM sound chip (the Philips SAA1099P) has 6 tone generators and 2 noise generators which are controlled via 32 internal registers.

The registers have various functions such as controlling amplitude, tone, octave range, envelope and noise, and this is achieved by the value of the data byte sent to a particular register. The Basic command SOUND x,d addresses a specific register 'r' and sends the data byte 'd' to that register. This information is transmitted to the sound chip via two output (write only) ports; port 511 for the register number and port 255 for the data byte.

The output from the tone and noise generators are mixed by the sound chip internally and appear as audio left and right output on pins 28c and 29c of the Euro-connector, pins 1 and 3 of the SCART socket and pins 2 and 5 of the light pen/audio socket. Should you wish to use machine code to produce sound, ports 511 and 255 will have to be addressed sequentially with the register number and data byte respectively.

That's all we have for this month. Please keep sending your problems/answers to the following addresses:-

Anything SAM or General Purpose:-

Ray Bray (Format Help Page),
Spring Cottage, Bourne Close,
Porton,
Salisbury,
Wilts, SP4 0LL.

Anything +3. CP/M:-

Mike Atkins (Format Help Page),
70, Rudgwick Drive,
Bury,
Lancashire, BL8 1YE.



★ sinclair ★

W.N.RICHARDSON & CO

(EEC)

QL & SPECTRUM PRICES REDUCED
QL £85 SPECTRUM +2 & +2A £70 SP+3 £80

★ KEYBOARD MEMBRANES NOW AVAILABLE ★
FOR SPECTRUM+ AND 128 £12 EACH. ★

* MICRODRIVE EXPANSION KIT *

Includes microdrive & interface 1 booklet, introduction cartridge, fix connector & wallet of 4 cartridges £29.95

As above with extra microdrive £39.95

NEW MICRODRIVES £24.95 2 for £40 (with connector)

* SPECTRUM POWER SUPPLIES *

SPECTRUM PLUS AND PLUS 2 £9.99

BLACK PLUS 2 AND PLUS 3 £12.25

(QTY DISCOUNTS AVAILABLE)

* MICRODRIVE CARTRIDGES *

4 new cartridges in wallet £10.00
20 in plastic box with separators £30.00
6 new (program cartridges for reformating) in wallet £18.00

* UNIVERSAL 3.5" DISC DRIVE FOR MICROS *

1Mb and 2Mb 3.5" cased, complete with built-in PSU, mains switch & 12amp plug, EXTERNAL dip switches adapt drive for Spectrum, QL, PC, Atari, Amiga etc. Comes with full instruction book, and free 8200 disc (DSDD with 2Mb). Price includes free lead.

(Spectrum & QL need 1 face) • Disc Drive 1Mb DDD 2Mb £29
Additional leads for 8200 £12
Unused 3.5" Disc Drive - low profile 1Mb £28 2Mb £36

Add postage £8. Disc Drive £8
Outside UK add £18. Other items £8. Q.W.O. or
VISA/Access

VISA

ALL OFFERS SUBJECT TO AVAILABILITY
Spectrum may be reconditioned



Orders to:
6, Ravenhead, Chiltern MK, Chalfont St. Peter, Bucks, SL9 0NB.
Telephone/Fax: 0484 871319

ALL PRICES INCLUDE 17.5% VAT

PAGEMAKER PRINTING

IN ARTIST II

By:- Carol Brooksbank.

In the *FORMAT* letters page, March 1994, Peter Ryan asked whether it is possible to improve the *PAGEMAKER* printouts, perhaps by using *ARTIST 2's* small grey screen-dump for printing.

PAGEMAKER makes one huge dump of 8 screens, 2 across * 4 down the page. The small grey dump prints sideways on the paper, so it cannot be used. If its dump was turned round the right way, it would be far too wide to sit side-by-side with another one.

But if your printer supports ESC * 5, the following will improve the proportions a lot.

```

48K version
CLEAR 32767
LOAD d1"art2b"CODE (from your working disc)
POKE 34597,5
SAVE d1"art2b"CODE 32768,2048 (back to your working disc)
    
```

```

48K version
CLEAR 63999
LOAD d1"scrdump"CODE
POKE 64034,5
SAVE d1"scrdump"CODE 64000,106
    
```

The 48K version poke can be used in "pagecod" to improve the multiple printing version.

If you want to improve the blackness of the print, the following Basic program will produce a printing routine which allows multiple passes of the head while printing. It is **ONLY** for the 48K *PAGEMAKER*, and can be adapted for the multiple page printer. Their printing routines reside at the top of memory,

above any other code, so we can lengthen them. The 128K version printing routine cannot be lengthened without overwriting something else. However, *PAGEMAKER* pages produced by the 128K program can be printed via the 48K *PAGEMAKER*, so 128K users can still benefit.

```

10 LET Q=130
20 FOR N=64000 TO 64139 STEP 10
30 LET check=0
40 FOR B=0 TO 9
50 READ A
60 POKE (N+B),A
70 LET check=check+A
80 NEXT B
90 READ A
100 IF check<>A THEN PRINT "ERR
OR IN LINE ";Q: STOP
110 LET Q=Q+10
120 NEXT N
125 SAVE "pmdans"CODE 64000,137
130 DATA 62,3,205,1,22,62,27,21
5,62,64,723
140 DATA 215,62,27,215,62,65,21
5,62,8,215,1146
150 DATA 6,24,33,0,192,197,229,
58,136,250,1125
160 DATA 71,197,229,62,27,215,6
2,42,215,62,1192
170 DATA 4,215,62,0,215,62,2,21
5,225,229,1229
180 DATA 6,64,197,229,6,8,17,64
,0,229,820
190 DATA 197,14,8,197,126,31,16
,253,203,18,1063
200 DATA 122,22,0,25,87,193,13,
32,240,215,949
210 DATA 193,225,16,228,225,35,
193,16,219,62,1412
220 DATA 27,215,62,65,215,62,0,
215,62,13,936
230 DATA 215,62,27,215,62,65,21
5,62,0,215,1146
240 DATA 225,193,16,173,62,13,2
    
```

PROFESSIONAL STANDARDS FOR DISTRIBUTION SERVICES BY COMMODORE UK

AMIGA A500+ A600-PC SPECTRUM COUPE CPC6128

DE ALSA/EUP SALE TO 13 Rodney Close Milton Rugby CV77 2JU

WATCHDOG-R

Prism PD is now affiliated to the PSD, who are a watchdog body ensuring high standards are met by its members. Prism PD will work in conjunction with the PSD, and as such we have set up "WATCHDOG-R", to work on similar lines as the PSD, but looking after the whole & bit industry. A full information sheet is available on request with an SA!

600+ Spectrum titles, games, business utilities, demos, clipart - for tape, +3 +DDisciple and Microdrive (provided by you). Orders sent in 7-7 days with a receipt. We also produce a 28 page magazine (A4), with the emphasis on PD. Reviews, news, features and Linda Barker, (ex "315" editor) fronts our club page. Price is £2 or £1.50 to club members. Membership is £3.50 and gives you a quarterly fact sheet, snapshots of our catalogue, enter competitions, discounts.

Most of our 48K software will work on the *Laurel* & we can provide *Spectrum* emulators for the Coupe 11 (tape prov. led). Amiga and PC 11 50 (disk provided) **SALE for FREE A5 & page catalogue**. Cheques/PO's payable to "M. Sherwood" as our free service does not qualify for a business account. Prism PD is an independent service and has no subsidiaries.

Our +D disk drive cannot handle 11D disks, so please send DD disks only - thank you.

If you are using a PC then send a disk in "M. Sherwood" for a catalogue of free PC software & shareware titles.

There are over 700 titles from emulators to business programs, 4 megas of clipart and much more DD/11D catered for. This service is independent and not connected to Prism PD.

```

15,62,0,215,1174
250 DATA 225,17,0,2,25,1,254,12
7,237,120,1008
260 DATA 31,208,193,16,146,201,
0,0,0,0,795

```

Type in this program, and RUN it. A new "scrdump" file will be saved to your disc. Now reset the computer to clear everything out of memory and type:-

```
MERGE d1"PAGEMAKER".
```

Type in the following lines.-

```

7015 INPUT "Number of head passe
s?";n
7020 POKE 64136,n

```

Now re-save the program:-

```
SAVE d1"PAGEMAKER"LINE 15
```

If you load this new "scrdump" code to 64000, and then POKE all the locations 64005-64010 inclusive with 0, and-

```
SAVE d1"pagecod"CODE 64000,137
```

you will have modified the multiple page code. Reset the Spectrum and type:-

```
MERGE d1 "MULTPAGE"
```

Add the following line:-

```
45 INPUT "Number of passes";n:
POKE 64136,n
```

and re-save the program with-

```
SAVE "multpage"LINE 10
```

Those whose printers can support ESC "*" 7 can improve both proportions and density by using the following program

```

5 LET firstbyte=64000,lastbyt
e=64109
10 LET Q=130
20 FOR N=firstbyte TO lastbyte
STEP 10
30 LET check=0
40 FOR B=0 TO 9
50 READ A
60 POKE (N+B),A
70 LET check=check+A
80 NEXT B
90 READ A
100 IF check<>A THEN PRINT "ERR
OR IN LINE ";Q: STOP
110 LET Q=Q+10
120 NEXT N
125 SAVE d1"ESC7"CODE 64000,106

```

```

130 DATA 62,3,205,1,22,62,27,21
5,62,64,723
140 DATA 215,62,27,215,62,65,21
5,62,8,215,1146
150 DATA 6,24,33,0,192,197,239,
62,27,215,985
160 DATA 62,62,215,62,7,215,62,
0,215,62,942
170 DATA 4,215,225,229,6,64,197
,229,6,8,1183
180 DATA 17,64,0,229,197,14,8,1
97,126,31,883
190 DATA 16,253,203,10,122,22,0
,25,87,193,939
200 DATA 13,32,240,215,215,193,
225,16,227,225,1601
210 DATA 35,193,16,218,62,13,21
5,62,0,215,1029
220 DATA 225,17,0,2,25,1,254,12
7,237,120,1008
230 DATA 31,208,193,16,176,201,
0,0,0,0,825

```

You should use the original, unmodified Basic, with this program. ESC "*" 7 printing is much denser than ESC "*" 4 or ESC "*" 5, so there is no need for multiple passes. If your printer supports this mode, this will give you the best proportions of all. Again, re-loading the code, poking 64005-64010 inclusive with 0 will give the code block for the multiple copy program if you save it as-

```
SAVE d1"pagecod" CODE 64000,107
```

You should use the original "multpage" Basic, unmodified.

The PAGESMAKER dumps will always be unshaded, so it is best to use simple monochrome illustrations. Those who need shaded illustrations in a page, to represent colour in the original screen, would be better using PCG's DTP pack which allows for that.

If you can use ESC "*" 5 or 7, pretty accurate printouts can be made. ESC "*" 4 is not too bad, though circles become a little bit egg-shaped. If your printer will not support any of these ESC "*" modes, I am afraid you are rather stuck with poor proportions. If you have had to use

the pokes on p.23 of the handbook because you cannot use any of these modes, you can still use the multi-pass printouts, but the addresses you must use for the pokes are:-

```

64037,75 64040,0 63043,2
64045,0 64046,0 64047,0

```

The pokes to enable the line-feed in the multi-pass version are 64118,10 to send a line-feed or 64118,0 if your printer does a line-feed with every carriage return automatically. 64040 is the address in the multi-pass program for the ESC "*" mode. Use 4 or 5 if you can. 6 may be worth experimenting with, but 7 will not give acceptable results with the multi-pass program.

In the ESC "*" 7 version, the line-feed poke address is 64088.

I hope this answers Peter's question, and helps more of you to get the best out of PAGESMAKER

FORMAT

Presents The New **DX1**
DISC and PRINTER INTERFACE
for the
48K, 128K, +2 and +2a Spectrum.

Based on the tried and tested PLUS D the DX1 comes with the famous UNI-DOS disc operating system built-in. Allows for 1 or 2 drives (3 1/2" or 5 1/4") and most parallel printers to be attached to your Spectrum. R.R.P. £59.95

INDUG Price only £49.95

State on order if you want the special +2a version.

ALSO AVAILABLE

We can supply a high quality 3 1/2" disc drive produced for us by Blue Alpha Electronics, for just £39.95 if ordered at the same time as a DX1

UK customers add £2 for 12A/ and £3.50 for Drives
Overseas customers write for quote on insured shipping. Please quote INDUG membership number

Send cheque (payable to FORMAT) to:

Format Publications (DX1),
34, Bourton Rd, Gloucester, G1 4 UL.

SMALL ADS

SAM 512K 1 drive and printer interface. Boxed £80. Also SAM and Spectrum 48K software. SAE for lists. Peter Rushton, 12, North Grove Drive, Leeds, LS8 2NJ Phone 0532-651650.

SPECTRUM SOFTWARE including Tasword 2, Artist 2, Bombyack, Manic Miner, Heroquest, Kick Off 2, Scrabble, Critical Mass - Send SAE for full list to Alan Cresswell, 18, West Street, Geddington, Northants, NN14 1BD.

SAM 512K 1 drive, cardcage, SPI, 1 external 3.5" drive, 1 rubber key Spectrum, 1 Spectrum+2, DISCIPLE, Messenger, SAM Tech manual, 9 Spectrum books, complete set FORMAT, lots of SAM software, loads of Spectrum software. All in original boxes. Will split or £325 one the lot. Ring Graham on 051 339 7770.

WANTED Cheap 48K Spectrum Must be full working order Leads/PSU not necessary. Also M/D, Tape, PLUS D PD contacts. Phone David on 0538 702723 6-8pm (not Monday).

LOOKING for Spectrum or SAM users all over the world Contact Candido, R. Caetano De Melo, 866, Oliveira Do Douro, 4400 Vila Nova De Gaia, Portugal.

SAM Coupé 512K with 2 disc drives, Printer interface, leads, manuals and discs. Including GM Calc, The Secretary, File Manager, SC_Filer, etc Extra products for sale include a full set of OUTLETs. Offers over £250. Tel Dr E.J Wilson on 0883-712753.

CANNON THERMAL PRINTER Very good condition with instruction book, cables, takes fax paper - spare roll included. Sensible offers only Phone Kevin on 0762 403233.

SPECTRUM +2 (grey case) with joy-stick and large box of games. £100. Phone Jon on 061 888 8138 after 8pm or at weekends

YOUR ADVERTS

Selling, Buying, Pen Friends, etc.

Any PRIVATE advert, subject to acceptance, will be printed FREE in the next available issue. Any software sold MUST be original. The publishers will not be held, in any way responsible for the adverts in this column.

Due to shortage of space, if your advert remains unpublished after two months then please send it in again. Trade advertisers contact the publisher for rates.

SC_WORD pro £29.99

At last a professional word-processor that takes a leap forward in printer quality output, the text you are reading now is an actual printout from the Sam Coupe.

SC_WORD pro does not use Lprint as used on other word-processors to output text, instead it takes control of up to 14 million dot positions available on a printed page, each individual dot can be set with ink or not printed out at all.

The advantage of this system is you are not restricted to the size and number of fonts your printer uses with Lprint.

With special software for 24 pin dot matrix printers to double printer resolution, and the support of Ink/Bubble Jet printers, you will find no other software on the Sam to beat this text quality.

SC_WORD pro uses it's own built in fonts which are crisp, sharp and non jagged, available in 11 sizes, proportional space letters and words, various justification, in fact the same quality you would get from more expensive word-processors on the Amiga and PC Computers.

No restrictive 64 column text on A4 paper, text can be placed at any position on all types of size of paper. No restrictive 32K edit area for your text, a generous 128K is provided, enough to hold up to 32 pages. The program is so easy to use, there are no control codes to fiddle around with, mouse supported as well as keys, ideal for beginners.

Borders, graphics, grey shade colour available in upgrade version FREE of charge later in the year.

SYSTEM REQUIREMENTS:-

512K SAM, with a copy of MASTERDOS. (Extra £12 for a copy)
24 Pin or 360 dpi Ink/Bubble Jet Printer.
1MB Ram and Mouse recommended, but not essential.

Other Sam Coupe Utility software :-

SC ASSEMBLER £12.50	Machine code editor. Allows you to type in machine code programs
SC MONITOR pro £15.00	Debug machine code programs, TurboMON included by Simon Owen
SC FILER £12.50	Powerful, user definable 99% machine code filing database program
SC_DTP £25.00	Desk Top publisher for arranging text and graphics for Newsletters etc.
SC_DISK PROTECTOR £15.00	Interface to solder, protects disc in drives from corruptions

For more information see last month's issue of Formal, or for a detailed Catalogue, Demos & Screen shots, Print Samples and other products please send a blank Formatted disc and three 2nd class stamps.

BUY NOW PAY LATER Still the most popular way to pay for software, just phone the below number, quote the items you would like to order, software sent out first thing next morning with invoice, have up to one month to pay.

STEVES SOFTWARE

7 NARROW CLOSE, HISTON, CAMBRIDGE, CB4 4XX.
TEL 0223 235150 From 6pm-9pm MON-SAT.

BASICally Speaking...

Part 8.

By:- David Finch.

Hello folks. Gather round, I want to have a little chat with you... Over the next few months I intend to go back to explaining commands (and hopefully clarify some of the briefer parts of the SAM manual). For now, however, I would like to talk about good programming. I know it is boring so I'll try and be brief, but I think it is important.

Although BASIC is a friendly and easy language, I think that there are two problems with BASIC as a beginners language. The first is that it is possible to sit down and 'compose' your program while writing it. Some people may think that this is convenient, but it is essential to define and plan your program so that you know exactly what you are aiming to do throughout the programming stage (more about this later).

The second problem is that Basic does not force structure on the program. I am not saying that you cannot write structured programs using Basic, but it is too easy for a beginner to get in a habit of unstructured programming. Any structure present in the final program is always a result of the programmers style, and not the language. An unstructured approach to programming is fine for a Basic programmer if he/she wants to program only in Basic. However, an unstructured style will be unusable with languages such as Pascal, Modula 2, Algol etc. and will cause problems to a programmer moving over

to such a language.

Like drivers, programmers like to think that their way is best. Thus, any attempt to define "good programming" is bound to create hate mail and death threats. Since Basic is a language used largely by beginners, many programming habits are formed at these early stages. If the programmer continues to write in a casual manner, he/she risks difficulties with other languages and writing with other programmers.

As mentioned before, it is vital that the programmer knows exactly how the program is going to develop before the code is written. You wouldn't write a novel while thinking of the plot because you have to develop the characters and scene first, and you can't do this until you know how you need them to be later in the story. You need to define the requirements of your program and split the tasks required into manageable parts. You can't begin to write these modules until you are clear on how they will interact with each other and in what order they must be done. Lists and flowcharts are very useful at this stage. (By the way, if anyone knows what a Nassi Schneider diagram is, please write in and tell me). This planning stage should be totally unconnected to the Basic language (or any other language being used).

Only when the devising stage is complete, the programmer should start writing the Basic program. The most

common mistake is to combine the devising and writing stages into one. This is probably because planning is boring and programming is what you really want to do. For commercial programmers the modules are often written by several programmers, and the need to stick to the plan is greater.

The moment of truth is when you first run the finished program. At this stage you should run the program with various sets of data (for which the results are known), and check that the correct response is given. You should test extreme and unexpected inputs. Your program should be like a human body. It should be split up into organs dedicated to specific tasks. Each organ shouldn't cause problems for other organs, yet each organ should be able to cope with unexpected inputs (your stomach didn't evolve to take hot curries, but it still copes). If you have a full understanding of your program, correcting any bugs should be no problem. A random approach to debugging is unacceptable. For example, a line drawn on the screen is too large. If you think that a certain program line is responsible, you may randomly reduce a number in the line, and it works! This suggests that you do not understand the program enough to find out the cause of the problem, and that you probably weren't totally understanding your work when you wrote it.

Finally, a good programmer writes programs that other programmers can modify to their needs without causing further bugs. An example of this would be a financial program which calculates VAT. Since the introduction of VAT on fuel (trying not to get political), there are two percentages, and so the program may need to be modified. By this time

you have been such a successful programmer that you have retired to some exotic island, so someone else has to modify your program. If you have done your job properly, the other programmer should be able to make the modifications EASILY and without causing further bugs. This also applies to you modifying your own programs.

I know I will not be popular with the members of the 'GOTO fan club', but good programs should consist of a main program and sub programs, avoiding GOTO as much as possible. The main program should do nothing except pass control between the sub programs. The sub programs should do all the 'work'. The sub programs should be specified in the planning stage. This makes the testing, de-bugging and modification of each module much easier since the module should be well defined and simple.

Anyhow, now that I have got that off my chest, lets get back to some proper stuff. We have already used PRINT to write letters, numbers on the screen. There are also 'block' characters available to use with PRINT and 'user defined' characters.

You may remember the CHR\$ command (part 6, April '94 page 20), which allows you to use the ASCII numbers instead of the actual character. The block characters are available using the CHR\$ command. For example, PRINT CHR\$ 134 will print two square blocks, one in the top left and the other in the bottom right. Each block is four by four pixels (pixels: the 'dots' which make up computer graphics). The other ASCII values which correspond to these block characters. There are sixteen in total, giving every combination of blocks. Conveniently, these values are the same

for Spectrum and SAM. The values are given in fig. 1 below.

128	136
129	137
130	138
131	139
132	140
133	141
134	142
135	143

Fig 1.

To demonstrate the use of these blocks:-

```

5 CSIZE 8,8 (SAM ONLY)
10 DIM a$(3,15)
20 FOR a=2 TO 14
30 LET a$(1,a)=CHR$ 131
40 LET a$(3,a)=CHR$ 140
50 NEXT a
60 LET a$(1,1)=CHR$ 139
70 LET a$(1,15)=CHR$ 135
80 LET a$(2,1)=CHR$ 138
90 LET a$(2,15)=CHR$ 133
100 LET a$(3,1)=CHR$ 142
110 LET a$(3,15)=CHR$ 141
120 LET a$(2,2 TO 14)="FORMAT I
S ACE"
130 PAPER 7:BORDER 7:CLS
140 INK 0
150 PAPER 5
160 PRINT AT 7,10;a$(1)
170 PRINT AT 8,10;a$(2)
180 PRINT AT 9,10;a$(3)

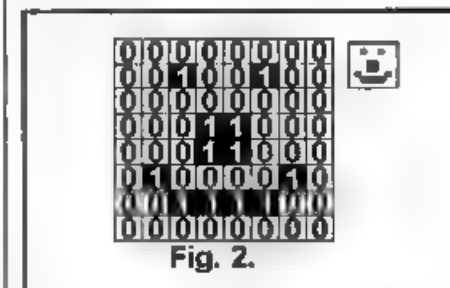
```

The CSIZE command in line 5, for SAM users only, makes the characters that are printed 8 pixels by 8. The default setting is 8 by 9, but this would leave lines one pixel wide between prints. Try changing line 5 to CSIZE 8,9 to see what I mean.

Also, Spectrum users can type these characters in directly from the keyboard. By pressing the GRAPH key you put the editor in GRAPHICS mode (in 48k Basic the cursor will become a G), then pressing numbers 1 to 8 or shift with 1 to

8 allows you to enter them just like any other character. Similarly for SAM users, Symbol with keys 1 to 8, or CNTRL with keys 1 to 8 allow you to enter these characters between quote marks (see page 89 of the SAM manual to see which key is which).

The problem with the block characters is that you can't produce detailed graphics in this way. Suppose you want to print a smiling face in your Basic program. We use UDGs (user defined graphics) for this purpose. Fig. 2. shows how I have arranged the pixels to draw a face in the 8 by 8 grid. We now need to POKE eight values into the memory, each value (an 8 bit number) represents a row of eight pixels. POKE is a command which just changes the contents of the memory, and you shouldn't worry about it if you are a beginner.



The command BIN tells the computer that the number is a binary number (made of 1's and 0's). For example BIN 10111011 is equal to 187. If you don't know how the binary number system works you may like to look at Machine Code Without Tears part 25 (April '94 page 13), although you don't really need to know for this. All that you need to know is that INK (or PEN) pixels are represented by 1, PAPER is represented by 0.

There are 21 UDGs available to use in

Spectrum Basic, each is represented by the letters A to U. To enter the information for your UDG you use the following program. Spectrum users should change all the UDG's to USR's.

```

10 POKE UDG "A",BIN 00000000
20 POKE UDG "A"+1,BIN 00100100
30 POKE UDG "A"+2,BIN 00000000
40 POKE UDG "A"+3,BIN 00011000
50 POKE UDG "A"+4,BIN 00011000
60 POKE UDG "A"+5,BIN 01000010
70 POKE UDG "A"+6,BIN 00111100
80 POKE UDG "A"+7,BIN 00000000

```

You could rewrite this program so that it is much shorter using a LOOP and DATA statements. However, since we haven't covered DATA so far I thought it would be simpler to write it like this.

If you want to use a different UDG (B for example), simply change the letter in the quote marks. Obviously, the 1's and 0's should be changed for your design.

We have a difference between SAM and Spectrum here. To use your UDG on a Spectrum you press the GRAPH key, then A and your UDG appears. You can use it in a PRINT command to display it in your program.

For the SAM, when you press A (in CAPS mode) you will get the face. In fact, whenever your SAM tries to print a capital A, the face will appear instead. You could use this to redesign the font, by designing new letters for all the characters. However, this would take a little longer than hours (especially if you aren't good at designing), so I recommend that you use the Font Library (see Readers Services Page), which does the job for you.

If you want to design a UDG on SAM without disrupting the text font you can use the ASCII numbers 169 to 255. This gives you 87 UDGs to play with. To do so you should replace the "A" with CHR\$ 169 (or the number of your choice) in the

program. To print them you should simply type PRINT CHR\$ 169 (or the appropriate number).

For the SAM, the 'block characters' are in ASCII numbers 128 to 143. They are normally switched on, but if you type BLOCKS 0 in your program you can switch them off. This allows you to use these ASCII numbers for even more UDGs, using the same method as before. Typing BLOCKS 1 switches the block characters back on, but your UDGs are not lost. You can use BLOCKS 0 at any time to PRINT your UDGs again (without typing in the data again).

Just one last point. You can save your UDGs to tape or disc, just like you do with programs. Suppose you have 'n' UDGs, each in consecutive ASCII spaces, you can type: LET n= The number of UDGs. Then to save things use one of the following:-

Spectrum tape:-

```

SAVE "Filename" CODE USR "A",8*n
or for a PLUS D or DISCiPLE -
SAVE d1"Filename" CODE USR "A",8
*n

```

(These assume that A is your first UDG character)

On SAM use the following to save:-

```

SAVE "Filename" CODE UDG CHR$ 16
9.8*n

```

(This assumes that 169 is the first ASCII character space used).

Use LOAD "Filename" CODE or LOAD d1 "Filename" CODE to load them back into memory

That's all for this month folks.

By the way, I would welcome any comments or suggestions you would like to make on the Basically Speaking series, they will help me to plan for the future. Just write *c/o* **FORMAT** and they will pass your letters on to me

Uni-Dos Corner

By:- Henk van Leeuwen. Edited by:- Adrian Russell.

This month we take a brake from all those CREATE files we have covered so far. Powerful though they are, they are just one of the reasons that UNI-DOS has fast become the standard disc operating system for the DISCiPLE and PLUS D. It is not only from machine code that users can exploit the system - there are some very powerful features available to the Basic programmer as well!

Here we have a Basic program to check overwritten programs on your disc. It does this by counting the used sectors and comparing this with the sector map written in the directory sector.

```

10 LET d=1: IF (PEEK #2) THEN
INPUT "DRIVE : ";d: REM if
there is only one drive don
't bother to ask which driv
e to use.
20 IF d<>1 AND d<>2 THEN GOTO
10
30 CLEAR #: REM close all stre
ams
40 OPEN #4;dd;IN :REM open the
directory as a read file.
50 FOR p=1 TO 90
60 POINT #4,p*256-255: REM poi
nt to start of each directo
ry entry
70 LET a$=(IN #4,15): REM get
a block of information from
directory.
80 LET n$=a$(2 TO 11): REM fil
ename
90 LET t=CODE a$(14): REM star
t track
100 LET s=CODE a$(15): REM star
t sector
110 LET tp=CODE a$(1): REM file
type.
120 LET n=256*CODE a$(12)+CODE

```

```

a$(13): REM number of secto
rs.
130 IF NOT tp THEN GOTO 270: RE
M if file is erased then ig
nore.
140 PRINT n$;" : ";
150 LET m=0
160 IF (t<>0 AND t<4) OR (t>79
AND t<128) OR t>207 OR s<1
OR s> 10 THEN PRINT "Wrong
track or sector number": RE
M if the track or sector nu
mber is invalid report erro
r.
170 PRINT " ";t;" ";s;" ";
180 POINT #4,(t*10+s)*512-1: RE
M point to the valid sector
map.
190 LET t=CODE INKEY$#4: REM ge
t the next track number.
200 LET s=CODE INKEY$#4: REM an
d the next sector number.
210 IF NOT t THEN GOTO 260: REM
if at end of file then jum
p out of reading loop.
220 LET m=m+1: REM add one to s
ectors found count.
225 PRINT " ";t;" ";s;" ";
230 IF t THEN GOTO 180
235 REM if the sectors found do
n't match the sector count
from the header record then
report.
240 IF n<m THEN PRINT INVERSE 1
;" ";m-n;" sectors to much
!"
250 IF n>m THEN PRINT INVERSE 1
;" missing ";m-n;" sectors
!"
260 PRINT
270 NEXT p
280 STOP

```

OK, got that typed in. Good. Now run it on a disc that has a couple of files on and you will see the results. Hopefully you will not find too many discs with errors on them.

WEST COAST COMPUTERS

Below you will find details of the full range of SAM hardware now available.

CODE	DESCRIPTION	PRICE
Presenting the <i>NEW SAM elite</i> , the latest computer in the SAM family. 512K RAM, Single or Dual Drive Machines <i>now with Built-in Printer Interface.</i>		
W1010	*** NEW *** SAM elite - 512K - Single Drive. *** NEW ***	£199.95
W1011	*** NEW *** SAM elite - 512K - Dual Drive. *** NEW ***	£259.95
INTERFACES (work with both SAM elite and SAM Coupé unless otherwise stated)		
W1101	SAM Disc Drive Upgrade. Have a second drive fitted to your SAM elite or Coupé. Factory fitting and return postage included in price. Ring 0452-412572 for instructions on how to return your computer.	£79.95
W1102	External Parallel Printer Interface. (for Coupé)	£24.95
W1103	RS232/Parallel interface (COMMS). (for Coupé)	£34.95
W1104	1 MegaByte External Memory Pack. (Needs MasterDOS to run from Basic).	£89.95
W1106	SAM Mouse System. Interface, Mouse and Software. Plugs into mouse port on rear of SAM. More and more software now works better if you use a mouse.	£39.95
W1107	External Disc Drive Interface and Parallel Printer Port (for Coupé)	£44.95
W1108	Internal 256K Upgrade (for older SAMs with only 128K of memory)	£34.95
W1109	7900 allows two interfaces to be connected to SAM at same time. Special Offer - Save £5 if ordered at the same time as any SAM interface.	£24.95

E.&O.E.

UK Postage & Packing: Add £6 for computers (sent by insured carrier).

All other items add £1 per item (max £5) free if ordered at same time as a computer.

Overseas customers: Please write for quote on Airmail Insured Delivery Service.

Write your order clearly on a reasonable sized piece of paper, state your name; address and phone number. Cheques, Postal Orders, Euro-cheques, should be made payable to **West Coast Computers Ltd.** We will try to dispatch your orders as quickly as we can - however please allow 28 days to be on the safe side. Some items have to be produced in batches and where this may cause a longer delay we will write to you as quickly as possible.

RAM SHORTAGE. Given the current shortage of RAM chips we may only be able to hold the current prices on SAMs, 256K upgrades and 1meg memory packs for short time. Any order received by 1st October will be accepted at the above prices - thereafter please see our next advert.

IMPORTANT NOTICE

To order any of the above items please send your order to:-
West Coast Orders, Format Publications, 34 Bourton Road, Gloucester, GL4 0LE.
Make cheques payable to West Coast Computers Ltd.



YOUR LETTERS

Dear Editor,

I have recently acquired three SAM Coupés, of which two are fully functioning with 256K memory and no disc drives. On power up the colour bars come up plus a message 'MILES GORDON TECHNOLOGY plc ©1989 SAM Coupé 256K' but there are various problems.

a) Due to not having a disc drive, I'm not able to access the fabulous software range on disc. Is there any tape software about now?

b) Also, due to not possessing a manual, I'm not able to use the extra basic commands. Where could I get one?

c) I borrowed a 512K, single drive SAM off a friend to see what the SAM can do - I liked it, but when I plugged the drive into one of my computers and tried to access the disc it comes up with '53 No DOS, 0:1'

Has this got to do with the internal ROM? If so what can I do about it? Or has it got to do with the DOS on the disc?

Would you please supply me with solutions to the above problems and any other helpful information that you feel I should know.

P.S. From Vol 7 N° 10 p16, I did PRINT PEEK 15 for the ROM version number and got the answer 10.

Yours Sincerely, Alan Tilley.

Well Alan, you have found three of the very early SAMs, but all is not lost. You do need disc drives, there is no tape software for SAM available these days. So, I would recommend sending your machines off to Blue Alpha for upgrade. Fitting a single drive costs £79.95 and an

upgrade to the ROM will cost an extra £12.95. This will get you up and running. Cheque for drive and ROM should be made payable to West Coast Computers. If you want a manual then we can supply one for £5 including p&p.

You don't mention what is wrong with your third SAM but Blue Alpha should be able to repair it for you. Send them details at the same time that you send off your first machine for upgrade and they will give you a quote. **Ed.**

Dear Editor,

Thanks for another great issue of **FORMAT**. In response to your request for information on Software supplies with respect in particular to knitting pattern software. My wife Sue has been using the Knitting Pattern Designers from Terry Mason for several years now. They were originally available on tape for the Spectrum and I converted them to run on PLUS D quite successfully and recently to run on SAM. They are written totally in Basic so can be modified if necessary. The four original programs were remarkably bug free albeit extremely involved and lengthy; in fact the Fashion Tops & Batwings program filled almost all of the 41k available on a 48k Speccy. Over the years a few bugs have shown up but have been easily fixed, and the original programs were supplied configured for a Kempston E printer interface - again easily altered.

The four programs were Classic Knits, Fashion Tops and Batwings, Tops II & Cardigans, and Skirts. I believe they are now all sold together rather than

separately.

Terry Masons latest advert in Machine Knitting Monthly advertises Knitting Pattern Writer available in the following formats:-

MSDOS, Atari ST, C64 disc, CPC6128 disc & tape, Spectrum tape and +3 disc. Discs cost £34.95, tapes cost £9.95

Knitters Database for PC £24.95 : CPC6128 £21.95

Available from: Terry Mason, 15, Inishmoynne Green, Antrim, N.Ireland. BT41 4JZ. Tel: 0849 462 381.

P.S. Perhaps you could persuade him to take an advert in *FORMAT*.

Yours Sincerely, John E.Redfern.

Many thanks John, I hope he will now be flooded with orders. *Ed.*

Dear Editor,

Thank you for replying to my letter. However, I found your reply to be most patronising and condescending, and uninformative. May I have an intelligent reply to my question - you produced a Family History Disc for the SAM Coupé, may I know where to obtain it from?

I quote "there seems to be a growing number of women using SAMs these days and they want to put them to good use...."

I dare say, if wives had any say in what computers/games machines their husbands buy, it would at least be IBM Compatible. Women have been using computers for years. I myself use one at work. Please, must you men be so patronising or condescending...

The SAM in this house is used by my husband and three children for playing games. It seems to me that this is all the SAM is good for.

Yours sincerely, Carol Burdge.

When I first opened and read this letter I rushed into the other office to check the master copy of *FORMAT* because I feared something had gone

terribly wrong between my editing and the appearance of my reply in print. Now I am really puzzled.

I don't see anything condescending in my reply, I certainly didn't mean there to be. I got Jenny to look at it and she can't see any reason for your complaint.

Any letters we get from readers will be passed on (some may have been already) and I will print any general replies (those not sealed and marked for your attention) in these pages if there is room.

This latest letter from you does illustrate my point very clearly. Women don't play games half as much as men, they want to use their computer as a tool, often to aid them in some other field. You want a Genealogy program, and hopefully someone will come up with one for you, but I find no reason for you to denigrate the SAM just because the software you happen to want is not instantly available when you demand it. You may well be able to get a program faster for the IBM, but it will cost you far more and will certainly not be as adaptable as anything produced for the SAM or Spectrum market.

I thought it was only the male ego that needed 'Power PCs' to satisfy. *Ed.*

Dear Editor,

Many thanks for the work that goes into *FORMAT*. Since joining INDUG last year it has turned our Spectrum +2 from a games machine into a computer, and at an affordable price. Do please give us the low down on monitors as it is next on our shopping list.

I could do with a spell checker as my spelling is very poor. Do you, or any of your readers know if one is available for the +2 with PLUS D and drive? I think one is available for Tasword on the +3.

Yours sincerely B.J.Easton.

Monitors will be covered sometime I hope. Spell checkers are another thing though. Yep, there is TAS-SPELL for the +3 but that is not very good. Sadly, as far

as I know, that is the only one ever produced for the Spectrum. *Ed.*

Dear Editor,

I was wondering whether it would be possible to compile a *Machine Code Without The Tears* booklet of all the articles so far covered.

When I bought my SAM all the courses for machine code were on their 20th or so article, which meant I'd need about 20 back copies to catch up!

I think many other SAM owners feel the same way and I would be willing to pay up to £15 for a compilation (maybe more!).

Yours sincerely, L.Falla.

Not a bad idea, what do other readers think, if there is enough demand then we will try to organize a book. However, as most people find, a complete set of back-issues is well worth having. *Ed.*

Dear Editor,

Do we really know what hardware or software people have? For instance, how many people have mice on the Spectrum. Little software uses mice, is this because there aren't many around, or because no-one really knows how popular they are. It would be very interesting and helpful if *FORMAT* could produce a readers survey. Ideally this would have two sections, one SAM + one Spectrum. Asking questions on Software/Hardware /DOS versions. It would inspire many people to write software, and produce their own commercially. This would help everyone by making more software, and it would give *FORMAT* an idea of what articles would be useful.

Also the STK toolkit in YS-75 is incredibly useful to me. It is a machine code aid set in 64 column text. Does anyone know if its PD or not? It would be nice to see it available to all.

Yours sincerely, David Powell.

We do small detailed surveys from

time to time, just to help us plan, but most of our info comes from the questions on the renewal forms which show a fairly even split of Spectrum/SAM owners. However, we will give more thought to a full survey to include questions on peripherals etc. *Ed.*

Dear Editor,

I have compiled my own index covering Vols 1-4 of *FORMAT* and enclose a copy for your information. It is comprehensive down to individual topics in the Help and Short Spot pages but does not include any Hack Zone items.

I intend to up-date for the later volumes in the Autumn and possibly to add a Hack Zone supplement.

In the meantime I am happy to supply anyone with a photocopy for £1 to cover expenses.

Yours sincerely, Peter Garrick.

Not bad Peter, the six pages you sent me must represent a lot of work.

If any reader would like to take Peter up on his offer to photocopy the pages then write to him at 27, Macers Lane, Wormley, Broxbourne, Herts, EN10 6EQ.

Dear Editor,

I enclose herewith my subscription renewal form, duly completed, and a cheque for the princely (poetic license) sum of £12 for another year's subscription to *FORMAT*. At this price it has got to be good value.

I have to say that I find almost everything printed to be of some interest and have decided not to indicate my three least liked articles. To be fair those articles I would list tend to be non relevant to my set up (SAM) rather than uninteresting.

It is nice to see that the printer port has finally been put into the revamped SAM Elite - about time too. It always seemed a rather silly idea not to have included it, and SAM has to be better

value now for those who decide to upgrade. Congratulations too to West Coast for the really neat design solution in installing it in the manner chosen.

May SAM and *FORMAT* continue for decades to come.

Yours sincerely, John Powell.

Dear Editor,

Could you please send me a name of a book that will help me to understand what all the abbreviations mean in relation to the SAM Coupé and my new ZX Spectrum +3 that I have just acquired.

P.S. Can you give me any information on the BBC The Net, I hope you will bear with me because I am quite young, I am only about 62 years old.

PPS. If I have missed a month please let me know how much the magazine will cost me. Thank you.

Yours sincerely, G.Hallewell.

There are several dictionaries available that cover computers - take a look in one of the larger book shops. The 'Dictionary of Computing' from Oxford Science Publications (ISBN 0 19 853905 3) is the one I refer to most.

So far I have not managed to watch The Net but I understand the series that just finished will be repeated later this year.

And no, you didn't miss a month, even if your renewal were to arrive late we still back-date it and send you any issues you are due. *Ed.*

Dear Editor,

Last month you said that there never was a project to build a new ASIC for SAM but I remember there being several mentions of it in *Your Sinclair*. Who got it wrong?

Yours sincerely, David Pascoe.

Well David, the story is this. At a computer show Bruce Gordon was being brow-beaten by someone who reckoned

that the existing ASIC wasn't good enough. Bruce listened, I understand with an increasingly blurred look in his eyes, and then, just to get away, he said something like "Yes a new ASIC could be done, yes he would be prepared to do it, and yes he would need to raise £x,000 (I've heard figures from £10,000 to £50,000 quoted). Anyway, some bright spark decided to publicise this in YS, and the rest you know.

There never was a possibility of a new ASIC because too many of the current ASICs exist in stock, and the cost of re-development would be too high (at least £100,000 and probably more), the whole project would not make economic sense.

There you have it, The truth, the whole truth and nothing but the truth - Girl Guides Honour. *Ed.*

Dear Editor,

Reading about the trouble you had with the 'Revelation' disc, reminded me of the trouble I had when I first bought my Spectrum +3 about two years ago.

The first discs I bought was Tasword +3. I could not get this to load so I returned the disc to Tasman. They replied that the disc was quite alright, but they sent me another one to try.

This second disc acted just as the first one had. I returned this to Tasman and the same procedure took place as before. The third disc acted the same as the other two, no joy. By this time I had accepted the fact that the disc was OK and the fault lay in my +3 and that I could not lay any blame on Tasman.

One night, about two weeks after I had given up on Tasword +3 I'd had rather a long session on the +3 when I thought I'd try Tasword +3 once more, and low and behold it loaded first time. I later found out, by observation and luck the Tasword +3 would not load until my computer was over 21 Degrees C.

I now have a thermometer on my +3,

and when the computer has 'warmed up' I know that I can load Tasword +3.

All my other discs load without the warm up, that was the reason I asked Mike Atkins to help me with Tasword2 (*FORMAT* Oct 1993) so that now, anything I might want quickly I save on Tasword 2 and Tasword +3.

Yours sincerely, Len Shelley.

Dear Editor,

Spectrum +3 users who may have difficulty in upgrading to two drives may be interested to learn that for a £43 outlay they can purchase a 3.5 inch External 720K disc drive Kit complete with a 3.5 inch IBM compatible disc drive (uncased), a ribbon cable, a Y adapter power lead and a useful 3.5 inch diskette which includes a utility function to format 3.5 inch discs for 706k of data.

No additional power supply unit is required, the Kit is completely self contained.

The two cables plus the utility software are also available for £6 per item for anyone who has their own drive, or £27 for all three.

Full details can be obtained by sending a SAE to: Christopher Box, 31, Stanley Street, Semilong, Northampton, NN2 6DD.

I have recently obtained this Kit and I am already enjoying its use because of the ease of obtaining 3½" discs at a sixth of the cost of 3" CF2's as well as the added bonus of now being able to store 706k per disc.

Yours sincerely, Bill Buxton.

I have not been able to check out the details on this one because I have been unable to obtain a telephone number. So I would recommend readers do write first for details just in case any of the prices above are out of date. *Ed.*

Dear Editor,

I am extremely happy to tell you that

the magazine has a healthy blend of ingredients. Thank you for allocating more space for the 'Small Ads'. This column had allowed me to collect quite a few books and software which are now out of circulation. However (here comes the moan!), some of the ads are published with a telephone number alone and thus can be useful only to folks who are living in England. Trying to call from overseas to such numbers can put quite a dent on your pocket. So please try to publish their full addresses as well, unless the advertiser has expressly requested you not to do so.

The note below the *FORMAT* Readers Services mention that the cheque should be drawn payable to *FORMAT* where as the New Year Sale advert says to send the cheque to *FORMAT* Publications. Are you able to cash the cheques which are payable to *FORMAT* Publications as well?

Yours sincerely P.A.Basheer.

We have to run the adverts as they are presented I'm afraid, in addition addresses would take up a lot more space and there would be the problem for the advertiser returning cheques to unsuccessful people.

While the banks are still threatening to impose the rule that the name on the cheque must EXACTLY match the name of the account, we still seem to be alright at the moment. So *FORMAT* will do, as will INDUG and *Format* Publications. *Ed.*

Dear Editor,

Thank you for the latest issue of *FORMAT*, I am enjoying the series on Basic, which is very helpful. I find the majority of articles applicable to me because I own a Speccy and a SAM which have served me very well over the years (much more reliable than the overrated Amstrad range!). I also own a Sega MegaDrive!!! (Hypocrite!!!) but only have a small amount of software for it as

the prices are astronomical, I just hope that the Monopolies and Mergers commission can stop the software giants from ripping off the average overworked, underpaid punter. I believe that the Sega range can never be called computers because they are solely developed to be used as games machines and are nowhere near as versatile as even a ZX80. The SPI you sent me works perfectly but, since the demise of my old (archaic?) Amstrad DMP1 printer, the lead has refused to work so my new Citizen Swift 24e has not had much use, except to print this letter from my Amstrad (which I have not used for at least a year!).

Anyway enough rambling, I originally started to write this letter to order a printer lead from your goodseives, so I can print some colour piccies off SAM and stick 'em on my wall! Thus saving on decoration costs so I can spend some cash on SAM for once!

*Yours sincerely, Charles Pickford
(just 18!).*

Dear Editor,

Thank you for yet another interesting issue of **FORMAT**.

Leading on from a point in the letters section by A.L.Vernon regarding a directory of back issues for **FORMAT**, I started thinking. Would it be possible to compile discs for all the useful programmes since **FORMAT** began? This could be done in such a way, say, one disc equalling 6 months worth of **FORMAT** for each particular computer, and be cross referred to the respective issues for further information. This would certainly be a great advantage to those readers who like myself may be either too busy or lack the will power to type some of the listings in.

Yours sincerely, Nick Symes.

Most of our readers seem to enjoy small programs to type in, indeed it is

one of the best ways to learn or improve programming skills. A few of the best Spectrum utility programs from earlier issues formed the Utility Disc advertised in the FRS page and I do have plans for a SAM Utility Disc as soon as I can get round to it.

At the moment there are no plans for any other releases - unless demand from readers force our hands that is. *Ed.*

Dear Editor,

Thank you for the PCG's DTP Pack which arrived with the current **FORMAT**.

However, your disclaimer in the accompanying note does little to mollify my disappointment at finding that, in the case of my ZX Spectrum + 128K I have to use the software in 48K mode which means that my Serial 8056 printer, which can only be operated in 128K mode, is useless.

Whilst I did indicate in my letter/order for this pack that I intended up-grading to a parallel printer, I did not anticipate having to do this immediately.

Yours sincerely, Roy Burford.

Like most commercial software for the Spectrum, PCG's DTP is designed for the 48K machine. It will of course run on a 128K but only in 48K mode. It is also designed for 9pin dot matrix printers.

There is obviously not room on the FRS page to give too many details and as it was such a well known program we thought we had covered it enough.

As to orders, you must appreciate that with so many to process each month it is impossible to read every one in detail. *Ed.*

Letters may be shortened or edited to fit on these pages although we try to edit as little as possible.

This is YOUR letters page so it is up to you to fill it with interesting things. Come on, get writing, any subject even remotely related to computers. Just keep things as short as you can so we can fit in as many as possible each month. Please write clearly or type your letters. Send them to the address on page 3 or fax them to us on 0452 380890.

SOFTWARE

SAM Coupé Software On 3 1/2" Disc

PCG's DTP PACK. The famous package including WordMaster, TypeLiner, HeadLiner. Complete on disc for SAM. R.R.P. £37.50. **SPECIAL READER'S BONUS** - Now includes 2 extra font packs worth £15.90 bringing the total pack value to £53.40.

Order Code: SCD-04 Price: £34.95

COLOUR DUMP. Screen dump software to work with Epson compatible colour printers. RRP £10.

Order Code: SCD-05 Price: £6.95

SAMSPEC SOFTWARE

SAM + Spectrum versions on 2DD disc (80 track 3 1/2" or 5 1/4" - please state on order)

FONT LIBRARY. 100 screen fonts plus support software, easy to use on either computer. Special +3 disc available (Spectrum files only). RRP £8.95

Order Code: SSD-01 Price: £6.95

MONEY MANAGER. Advanced personal budgeting system for both machines. Spectrum version needs 128K+2 (not +2a or +3). RRP £16.95

Order Code: SSD-02 Price: £12.95

SPECTRUM SOFTWARE

Unless otherwise indicated these are DISCIPLE/ PLUS D programs. Please state 3 1/2" or 5 1/4" disc (80 track only) on order.

ARTIST 2. The best art package ever written for the Spectrum. 48K and 128K versions on the same disc. With page-maker and utility software. Full manual. RRP £19.95

Order Code: SPD-01 Price: £16.95

UTILITY DISC #1. Six of the best and most useful disc utilities for DISCIPLE or PLUS D. Added bonus program - not to be missed. RRP £9.95

Order Code: SPD-02 Price: £6.95

PCG's DTP PACK. The famous package including WordMaster, TypeLiner, HeadLiner. R.R.P. £37.50. **SPECIAL READER'S BONUS** - Now includes 2 extra font packs worth £15.90 bringing the total pack value to £53.40.

Order Code: SPD-04 Price: £34.95

Special 3" disc version for +3
Order Code: SPD-04C Price: £36.95

HARDWARE

SPI - SAM's Printer Interface. A full feature parallel (Centronics) printer interface. Totally compatible with SAM's ROM and DOS printing routines and with utility programs like FLASH, Word-processors, etc. Uses standard BBC type lead (see below). RRP £24.95

Order Code: SPI Price: £19.95

>>>>

FORMAT

READERS SERVICES

PRINTER LEAD. Top quality parallel printer lead (BBC standard). 2 meters long. For use with DISCIPLE, PLUS D or SAM. RRP £10.95

Order Code: PPL-01 Price: £7.95

SAM COUPÉ TECHNICAL MANUAL Version 3.

The real inside info on SAM. As published by MGT/SAMCO. No SAM is complete without one. Now only available through us. RRP £16.95

Order Code: STM-01 Price: £12.95

MOUSE MAT & HOLDER. Top quality mouse mat (not to be confused with the small cheap ones) together with a handy mouse holder to keep your mouse out of harms way when not in use. Holder fits to any smooth surface with sticky pads provided. RRP £8.98

Order Code: SMM-01 Price: £5.95

FORMAT BACK-ISSUES

Volumes 1 and 2 are no longer available. Volumes 3 and 4 of **FORMAT** are now available only as complete volumes.

Order Code: FBI-V3 (Vol.3) Price: £12.00

Order Code: FBI-V4 (Vol.4) Price: £12.00

All issues, from Volume 5 No 1 to the latest issue, are still available separately. To order just quote the Volume/issue No. Price: £1.50 each, (5 or more £1.25 per copy).

FORMAT BINDERS

Hardcover binders to protect your valuable magazines. Each will hold 12 copies of **FORMAT** (or any other A5 magazine or manual). Copies held in place by wires that just spring out for easy insertion or removal. Sorry, but we can't guarantee a specific colour (although we will try).

Order Code: FMB-01 Price: £4.50

ORDERING All prices include UK p&p, overseas readers please add 10% to total order for extra postage.

Clearly state Order Code, Product description, Quantity required and Price. Remember to add any postage and don't forget your Membership Number or we can't process your order. Payment in STERLING by Cheque (drawn on a UK bank), P.O. Euro Cheque or Cash. Make cheques payable to **FORMAT**. Payment MUST be in same envelope as order. Send to **FORMAT's** address on page 3. Normally dispatch is at the same time as your next issue of **FORMAT**. We will not be held liable for delays or non-delivery due to circumstances beyond our control.